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INVESTIGATION OF THE NATIONAL DEFENSE PROGRAM

HEARINGS

BEFORE A

SPECIAL COMMITTEE INVESTIGATING THE
NATIONAL DEFENSE PROGRAM

UNITED STATES SENATE

SEVENTY-SEVENTH CONGRESS

FIRST SESSION

PURSUANT TO

S. Res. 71

A RESOLUTION AUTHORIZING AND DIRECTING
AN INVESTIGATION OF THE NATIONAL
DEFENSE PROGRAM

PART 7

AUGUST 6, 7, 12, 13, 25, 26; SEPTEMBER 12 AND 15, 1941

DEFENSE CONTRACTS

CAMP CONSTRUCTION

DEFENSE PROBLEMS IN NORTHWEST

ALUMINUM

Printed for the use of the Special Committee Investigating
the National Defense Program



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1942

**SPECIAL COMMITTEE INVESTIGATING THE NATIONAL
DEFENSE PROGRAM**

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INVESTIGATION OF THE NATIONAL DEFENSE PROGRAM

WEDNESDAY, AUGUST 6, 1941

UNITED STATES SENATE,
SPECIAL COMMITTEE TO INVESTIGATE
THE NATIONAL DEFENSE PROGRAM,
Washington, D. C.

The committee met at 10:37 a. m., pursuant to adjournment on Tuesday, August 5, 1941, in room 318, Senate Office Building, Senator Harry S. Truman, Missouri, presiding.

Present: Senators Harry S. Truman (chairman), Mon C. Wallgren, James M. Mead, and Ralph O. Brewster.

Also present: Hugh A. Fulton, chief counsel.

The CHAIRMAN. The committee will come to order. Mr. Fenn, will you be sworn, please? Do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. FENN. I do.

The CHAIRMAN. Be seated, Mr. Fenn, and give the reporter your name and connections.

Mr. FENN. Francis H. Fenn, president, Bantam Car Co.

TESTIMONY OF FRANCIS H. FENN, PRESIDENT, AMERICAN BANTAM CAR CO., BUTLER, PA.

DEVELOPMENT OF THE "JEEP" CAR

The CHAIRMAN. Mr. Fenn, we are interested in the development of the "jeep" car. I understand you know a great deal about it. I would like you to tell us about it, if you please.

Mr. FENN. The original correspondence with the Army regarding the use of a light car similar to the present "jeep" for reconnaissance and other purposes, started back in May 1938. Shortly prior to that time, the American Bantam Car Co. had sold the Quartermaster Corps three chassis. However, they did not prove to be successful, and after additional development we continued the correspondence up until approximately February 1940. About February 1940 we employed Charles H. Payne to represent us in Washington on the sale of the products of the American Bantam Car Co.

The CHAIRMAN. What is the American Bantam Car Co.?

Mr. FENN. It is a corporation, a Pennsylvania corporation.

The CHAIRMAN. Where is it located?

Mr. FENN. Butler, Pa.

The CHAIRMAN. Go ahead.

Mr. FENN. Mr. Payne, after working with the Army, succeeded in selling the idea of a car similar to ours to be used, with the result that

in June 1940, a technical committee, consisting of Colonel Lee, of the Infantry; Major Tompkins, of the Cavalry; Colonel Atwood, of the Ordnance; I believe, Mr. Robert Brown, a civilian engineer from Holabird; Mr. Beasley, and I believe there were one or two other officers, came to Butler, Pa. We gave them standard Bantam roadsters to put through their paces out on the inside of the county fair-ground race track where the terrain was anything but smooth; it was rough and muddy and would provide a pretty good test of what a light car would do. After about an hour of their putting the car through its paces, we then went back to the factory and loaded 4,200 pounds of dead weight on a standard Bantam chassis without the frame bending in any way. There was no sign of any break-down of the car. The tires flattened out, but that was all that happened.

We were rather convinced of the ability of the car because even as it stood as a two-wheel drive it performed favorably. In two previous summers we had loaned roadsters to the Pennsylvania National Guard, Major Leach and Major Rutgers, who used them as reconnaissance units and as command units, and they performed very well over any terrain motorcycles would cover. So we weren't at all surprised at the favorable reaction we got from the technical committee when they visited us in June 1940.

Now, as a result of the tests that were run with standard roadsters, the technical group adjourned to my office, and Mr. Beasley and Colonel Atwood and myself sketched out on paper a rough idea of what this car should look like, and more or less general specifications were laid out and agreed upon for the command car.

The Army officers returned that night to Washington and left Mr. Brown, and I believe Mr. Beasley—in fact, I am sure Mr. Beasley remained. We called in engineers from the Spicer Manufacturing Co. who had devoted considerable time to the development of a four-wheel drive, and continued our work in connection with laying out the car proper. Mr. Brown returned to Holabird. We visited Holabird on several occasions, and finally general specifications were drawn. The specifications originally called for the use of our standard Bantam engine, but after our engineers had gone farther into the lay-out of the car and after Holabird had done the same thing, we agreed that a heavier engine would be necessary, a more powerful engine, with the result that we went to Continental Motors and had developed for us the engine that has proven successful in these vehicles.

On July 11, 1940, the Army sent out requests for bids for 70 pilot models, 62 of them to be four-wheel drive and two-wheel steer; eight of them to be four-wheel drive and four-wheel steer. We were awarded the contract to build those cars on July 25, 1940. The amount of the bid was \$173,070.56. In our bid we agreed to develop, build, and deliver to Holabird the first pilot car in 49 days. That was done.

After that car, the original pilot, had passed through its test at Holabird with no major break-downs, Holabird ordered us to proceed with the construction of the remaining 69 cars. Those were completed and sent to the field, and it was those 70 cars that proved that the so-called "jeep" was really an outstanding weapon.

After the 70 cars had been in the field, we received an order on November 25, 1940, for 1,500 additional cars. The amount of that order was \$1,519,051.

Prior to receiving that order, our Mr. Payne offered the complete facilities of our plant to the Government for the production of this unit. That communication was addressed to Mr. Knudsen.

The CHAIRMAN. What was the date of that, do you remember?

Mr. FENN. Mr. Payne can give you that, sir. I don't have it with me.

The CHAIRMAN. Will you furnish it for the record?

PRODUCTION CAPACITY OF AMERICAN BANTAM CAR CO.

Mr. FENN. The facilities of the plant constitute an excellent machine shop, an excellent body plant, and an assembly line designed particularly to take care of the manufacture of this car. It is so set up that material can flow from incoming trucks to the line within a matter of 2 minutes. In fact, incoming axles can be taken from the truck and be in the paint in about 2 minutes, and be on the line on the way up to the head of the assembly line. The same thing applies to frames.

Frames and axles, incidentally, are two items that are generally bought outside in the case of the independents.

We were given to understand early in the course of the production of this unit that the business of any one supplier supplying all the cars was out. That more than one supplier would be needed, and this, in effect, was borne out by a visit which we received about April 20 from Major McAuliffe of G-4 and Mr. Curry of the Assistant Secretary of War's Office. They came to our plant, inspected it, discussed with me the best way to keep the plant running, the idea being that we would not lose the key men or break up the most important groups of employees that had been developed by us for the production of the command car, and who had the "know how" production-wise. We discussed that at quite considerable length.

There seems to be, however, some confusion as to the capabilities of the factory production lines, and I would like to go on record here as stating that at no time during the production of these cars, even when we were at 65 and 68 cars a day, were we beyond 60 percent of the capacity of our line for an 8-hour shift.

Mr. FULTON. What would have been your total capacity for a day if you had three shifts?

Mr. FENN. If we had run 3 shifts there would have been 275 to 300. I will leave that—well, I put it that way, sir, because material control today is something that is most difficult for everyone.

Mr. FULTON. Would that have been 275 to 300 cars a day without any additional tooling, or would it have required additional tooling?

Mr. FENN. It would have been 275 to 300 cars a day without any additional tooling.

The last two times we bid on these cars we provided a dollar or two per car in our bid for nominal tooling expense which might come up in the repairing of jigs, and things of that sort.

Mr. FULTON. But essentially you had sufficient capacity and plant and tools to make that quantity of cars?

Mr. FENN. Essentially. We could go ahead right at the present and follow right through on the present order without any more tooling than the maximum of \$2 a car.

Now, as a result of the visit of Major McAuliffe and Mr. Curry, our production was cut down. That was agreeable to us and was agreeable to the Army.

Mr. FULTON. Why was it cut down?

Mr. FENN. Well, it was cut down because by slowing down to 15 cars a day from the speed we had attained, which was around 65, we could keep on running and retain the services of these key men without losing them.

The CHAIRMAN. Would the Army order you to cut them down when the people who need these things in the Army were crying for them at the rate of a thousand a day?

Mr. FENN. There never has been any question in our minds but that two or three sources were going to be needed. Our plant, after inspection, was proved to be set up for the manufacture of this car. The entire assembly line had been torn down and rearranged. Parts of the machine shop had been torn down and rearranged. It was a "jeep" car assembly line. The conveyors were arranged to handle the frames.

The CHAIRMAN. What I am trying to get at is why would the Army order you to cut down and then proceed to order these "jeeps" at a rate of 1,500 from various other manufacturers when you could go ahead and make them. That is what I want to know.

Mr. FENN. Well, I assume the Army wanted to retain as many sources of supply as it could.

The CHAIRMAN. Proceed with your story.

Mr. FEEN. We naturally understood that the car had been a success after the testing it had received. I don't think there ever was any question in the minds of the Army as to the success of the weapon. Their policy had been more than one source. If they were going to go on and continue to make cars, it was imperative that they keep their sources going. We were willing to go along and cooperate on any basis. Particularly as the originators of this unit, we most emphatically wanted to stay in.

The CHAIRMAN. Are you making these cars now?

Mr. FENN. We have 1,077 additional cars to fabricate. We are starting on them very shortly.

The CHAIRMAN. Proceed with your statement.

Mr. FENN. As a result of the visit of Mr. Curry and Major McAuliffe, we received an order for a thousand cars additional. It was hoped that by stretching the thing out, that is the first 1,500, as far as we could there would be no gap, but there has turned out to be a gap of 5 or 6 weeks. In addition to the thousand cars we received—rather, the thousand-car order was later increased by 22 units, and we subsequently received an order for 50 four-wheel steer cars.

In connection with the first 1,500, the final delivery date was extended 50 days, until July 2, and that contract was completed on June 26, 6 days ahead of the revised final delivery date.

However, this should be in the record, that 150 of the cars to be built were shipped abroad, and we were asked accordingly to make

large parts shipments to accompany them. There were no provisions made for parts when the order was originally placed. We were not able to get very much satisfaction as to how many parts would be needed for these cars, so in order to ship these parts to export for the 150 cars, it was necessary for us to take the parts from 11 cars and box those as parts and ship them to export. Those 11 cars will be built with the thousand that we are just starting on.

As we stand today, to sum up, we played with the idea of a unit of this sort for a long time. Finally, the Army sent a technical committee to our plant. In our plant the Army and ourselves laid out this unit. We went through the growing pains of developing the thing. We think our production of the pilot model in 49 days was something rather unusual in the automobile industry. We built 70 by hand in the required time. Toward the end, we ran out of material and we suffered a small penalty for, I think, it was 4 days' delay. But all the way up and down the line, through the proving of this unit, and certainly the 70 cars proved it, the American Bantam Car Co. has carried the burden. We were the first down there with a test car and the first one out, and the 70 cars that were sent into the field proved beyond any possible question of a doubt that the "jeep" car is an outstanding weapon. At no time up until now did we have any idea that it was going to be an all-or-none proposition. We expected and accepted the theory of standardization. There has never been any question on that as far as I am concerned. Our company has never questioned the wisdom of it. We didn't expect the schoolboy short cut, however, in order to accomplish it after we had understood for months that there had to be more than one source. We expected that the best things in each car would be preserved to the Government, and we worked to that end and received excellent cooperation from the Quartermaster Corps all the way down the line in the development of this unit—not only cooperation but courtesy.

COMPETITIVE BIDDING AND AWARDING OF CONTRACT FOR ARMY "JEEP" CARS

The CHAIRMAN. What has really happened, then?

Mr. FENN. What happened is that there has been a direct turn-about, and instead of having more than one source they are now willing to accept one source; they are willing to accept the congestion, the possibility of tie-up because of labor trouble, sabotage, or anything else, where fundamentally this thing when started, sir, was based on having more than one source so at no time would the Army be held up in delivery of these cars.

The CHAIRMAN. You mean the contract for delivery has been made with just one firm?

Mr. FENN. I mean that the last 16,000 cars purchased have been purchased from one firm.

The CHAIRMAN. Without a distribution to the three sources from which they are available?

Mr. FENN. The other three sources all received invitations to bid, but the bid read "all or none." I don't know the mind of the Army.

The CHAIRMAN. We have been trying to find it out. It is a very mysterious mind.

Mr. FENN. I have been told by the Army, sir, that they wanted to negotiate this entire deal. I assumed by that that they meant what we assumed they meant, which was to sit down and preserve to the Army the best things in each of the cars being built by the various vendors. In other words, to take the best frame, to take the best engine, and build a standardized unit.

The CHAIRMAN. Well, is that what they are doing?

Mr. FENN. No, sir.

The CHAIRMAN. What are they doing?

Mr. FENN. The specifications were written and the bids were let out, "take all or none."

The CHAIRMAN. On one specification?

Mr. FENN. On one set of specifications.

The CHAIRMAN. The good and the bad all together?

Mr. FENN. I don't know about that, sir.

Mr. FULTON. What was the set of specifications most near? Was it a Bantam car or a Willys car or a Ford car or a conglomeration of the three, or what?

Mr. FENN. I would say that the specifications involved changes that the Army desired. I think the man who could have made them with the least changes is probably Ford. I say that because to meet the specifications required extensive front-end sheet metal changes on our part, it required lengthening our body, and it required quite a few other items which were hard on us. Their may have been equally hard on the others, I don't know. I am not in a position to talk for them. I am speaking simply for ourselves. But the point I would like to make is this: that I think standardization could have been attained and accomplished by round-table conferences that would have given the Government everything good in every car, and I also think that in face of the fact that the American Bantam Car Co. went through this thing from stem to gudgeon from the very first, if these engineering changes were going to be made, if changes were going to be made in the car, we at least should have been given an opportunity to discuss them as the originators of the unit.

The CHAIRMAN. Did the Government finance your plant?

Mr. FENN. No, sir.

The CHAIRMAN. Did they lend you any money?

Mr. FENN. The Reconstruction Finance Corporation did.

The CHAIRMAN. That is the same as the Government. They lent you some money to enlarge your plant to build this car, didn't they?

Mr. FENN. They lent us money to fabricate this car and to buy the tools, and they also lent one of the competitors money to build the car and to finance the tools.

The CHAIRMAN. Which one was that?

Mr. FENN. Willys-Overland.

The CHAIRMAN. So that both the Bantam and the Willys-Overland were financed at least to that extent by the Government?

Mr. FENN. Yes, sir.

Senator BREWSTER. There was considerable delay in deliveries on the Willys-Overland, wasn't there?

Mr. FENN. Yes, sir; the Willys-Overland Co. was favored, I would say, quite considerably. In other words, we had to get down to work and produce the cars on time, and we were on the way to

doing it; I am not familiar with the circumstances, however. They didn't get going until, roughly, 60 days after Ford and ourselves got going.

Senator BREWSTER. Do you think that had any effect on this present situation?

Mr. FENN. Well, I don't know, sir, but I know that there wasn't any English minced with me in getting these contracts out on the minute.

Senator MEAD. Is it possible that a further preference was shown to the Willys-Overland Co. by reason of the fact that they were not required to submit a pilot model to the board of officers at Holabird, Md., which I understand you had previously done?

Mr. FENN. Well, we couldn't have sold any cars without a pilot model. We built 70 pilot models and they approved this weapon. That is the important point in my mind.

Senator MEAD. Did the Willys-Overland construct a pilot model and have it submitted to Holabird for approval as you did?

Mr. FENN. I understand they sent one down. I don't know what happened to it, whether it went through the test or whether it didn't. I know there was considerable discussion about weight, and, after all, the Ford Co. and ourselves got going about the same time and produced the cars about the same date. Willys have just finished producing theirs.

Mr. FULTON. Will you tell us about the question of weight? Had that been considered an important factor by the Army in its discussions with you concerning the development of the car?

Mr. FENN. Weight was one of the outstanding considerations. The car had to be manhandled by three men. The lightest production cars to date are built by the American Bantam Car Co.

Mr. FULTON. What are the weights that they allow?

Mr. FENN. Twenty twenty-six is the weight of ours. I understand the weight allowed is 2,175 top.

Mr. FULTON. How much would they allow you in the first contract?

Mr. FENN. In the first contract we had to stay under 2,100 pounds.

Mr. FULTON. And did the Willys car stay under 2,100?

Mr. FENN. I am not prepared to say for sure, but all the rumors are that it did not by a long way.

Mr. FULTON. Was the weight allowance increased thereafter?

Mr. FENN. The weight allowance was increased on the present bid.

Mr. FULTON. Well, your bid, of course, is the highest of the Ford, Willys, and Bantam bids.

Mr. FENN. That is right.

Mr. FULTON. Would you tell us anything that you know concerning that, that might explain why your bid is \$40 higher than the Willys and \$6 higher than Ford?

Mr. FENN. Well, I will simply say that I am borrowing Government money. Our company is slowly pulling itself out of debt to the Government, and I know that I can pay back Government loans on that price, and I don't know that I could pay them back at \$40 less.

Mr. FULTON. Do you buy your axle assembled?

Mr. FENN. I am not even so sure that we would come out on it. We buy our axles from the same place that Willys-Overland buys theirs.

Mr. FULTON. Do they expect to continue buying their axles from that company or to produce?

Mr. FENN. I don't know. I talked to Mr. Hall of the Spicer Co. yesterday, and he said he was going to provide the axles for these 16,000 cars.

Mr. FULTON. So that the axles would be about the same.

Mr. FENN. The axles will be very much the same.

Mr. FULTON. As to prices?

Mr. FENN. They are made off the same tools that ours would be made off of.

Senator BREWSTER. Has there ever been any question about the quality of your cars?

Mr. FENN. No, sir.

Senator BREWSTER. Your deliveries to date, as far as you know, have been satisfactory?

Mr. FENN. I believe so. I mean we have met our dates. The cars have performed. We have had little minor troubles; things fall off once in a while, like they do off any automobile; but I believe their record of performance is as good, if not better than any of them, and I am inclined to think it is a little better because of major units such as frames and items of that sort—we haven't had any frame trouble.

The CHAIRMAN. Is your company independently owned or is it owned by General Motors or one of the big three?

Mr. FENN. It is independently owned by 1,500 stockholders.

Senator MEAD. According to the record here, I learn that upon completion of the 70 pilot cars, the Chief of Staff was evidently satisfied with the character and the quality of your car, because he directed that an additional 1,500 be procured from the Bantam Co. Is that true?

Mr. FENN. That is right.

Senator MEAD. When this order was submitted to other agencies that knew nothing about the character or the quality of the car, but merely had to do with the clearance of orders, the matter was held up, not by reason of the quality of your product but because of a theory that they had that it would be better to divide the order among a number of companies. Is that the reason that that first 1,500 order was held up—they thought it ought to be distributed to several companies? That is what the record that I have indicates.

Mr. FENN. Before the order for 1,500 cars was ever received by us, I visited Mr. Biggers, and Mr. Biggers told me at that time that he had nothing against the American Bantam Car Co.

Senator BREWSTER. Who is Mr. Biggers?

Mr. FENN. Office of Production Management.

Mr. FULTON. Chief of Production.

Senator BREWSTER. Is he concerned in the placing of this order?

Mr. FENN. He was concerned in placing the first one, and I assume he is concerned in placing all of them.

Senator BREWSTER. Had he been connected with the automobile business?

Mr. FENN. He is in the glass business. He is president of Libbey-Owens-Ford, at Toledo, Ohio. Spicer is at Toledo, Ohio.

Senator MEAD. Where is this glass company located?

Mr. FENN. Toledo, Ohio.

Senator MEAD. Is that where Mr. Biggers lived?

Mr. FENN. Yes, sir.

Senator MEAD. And he is with O. P. M. now, and he has something to do with these orders?

Mr. FENN. Yes, sir.

Senator MEAD. Has your company a representative on O. P. M.?

Mr. FENN. No, sir.

Senator MEAD. They haven't loaned anybody to the O. P. M.?

Mr. FENN. No, sir.

Senator MEAD. You are a small, independent outfit, though; is that it?

Mr. FENN. That is right.

The CHAIRMAN. Willys-Overland got this bid for 16,000 cars, didn't they?

Mr. FENN. Yes, sir; I understand so.

In my talk with Mr. Biggers, he told me frankly he had nothing against the American Bantam Car Co. or any of the individuals connected with it, but that we were small and weak and he doubted our ability to produce the cars.

Mr. FULTON. Had the Willys-Overland had a record of success as a manufacturer of automobiles in recent years?

Mr. FENN. Well, they made money 1 year in the last 5.

Senator MEAD. Have they ever been in this particular field?

Mr. FENN. No, sir.

Senator BREWSTER. Where is your plant?

Mr. FENN. Butler, Pa.; about 25 miles north of Pittsburgh.

Senator MEAD. And is it true that you pioneered and developed this idea of the small car?

Mr. FENN. It is most emphatically true, sir. It is so true that I personally saw Ford Motor Co. representatives in under our car in a grease pit at Holabird with a clip board making freehand drawings of the lay-out.

Senator MEAD. Then you really got the first educational order?

Mr. FENN. We had the first car down there, the first car to be tested, and it was looked over by the other two manufacturers from stem to stern, without any question, or any interference, or anything else.

The CHAIRMAN. You obtained the order on an educational order, didn't you?

Mr. FENN. Yes, sir; and these 70 are still running.

Senator BREWSTER. Is there any other field of defense production to which you could readily convert your facilities?

Mr. FENN. Not without considerable amount of difficulty and expense.

Senator BREWSTER. How far have you explored that?

Mr. FENN. We have explored it just about as far as it is possible to explore it. In other words, our machinery is automobile machinery, sir. It isn't machinery that will permit us to go ahead and make, well, let's say, gun mounts and things of that sort, or breech mechanisms.

The CHAIRMAN. The Reconstruction Finance Corporation made you this loan for the purpose of doing this very job, didn't they?

Mr. FENN. Yes; and they have since made us another loan to build this second thousand cars.

The CHAIRMAN. How much is that total loan from the Reconstruction Finance Corporation?

Mr. FENN. We originally, on the first 1,500 cars, borrowed \$1,300,000 and paid them every cent plus a substantial profit that we made on the 1,500 cars, which reduced our R. F. C. loans. On the second thousand cars we hope to reduce our R. F. C. loans another \$50,000. In other words, at one time we owed them \$375,000, and we are down now to \$256,000, because we also have some other income from blanking, and items of that sort, all of which they get. They have a comptroller in our office. Every nickel that goes into the bank automatically becomes theirs.

Incidentally, I might add that we asked for a comptroller to be put in our office so there would be no question ever as to the accuracy of our costs and as to the Reconstruction Finance Corporation's getting everything in the way of profit they could out of business that we did, so we could pay their loans off.

Senator BREWSTER. How much of a plant have you got there? What is the approximate investment?

Mr. FENN. What is that?

Senator BREWSTER. What is the approximate investment?

Mr. FENN. Our approximate investment is a million dollars.

Senator BREWSTER. How many men do you employ?

Mr. FENN. When we were building reconnaissance cars, we employed about 450. On this job we will employ men in almost direct proportion to the amount of cars we have to build.

Senator BREWSTER. Would you have any difficulty getting labor around there?

Mr. FENN. No, sir. We have an excellent labor market. We are not unionized, and we have never had an iota of labor difficulty. The men are happy, and we treat them fair.

Senator BREWSTER. If you have 5,000 of these cars, you would be able to turn them out promptly?

Mr. FENN. Yes, sir. We would be able to start production on 5,000 units, I would say, the latter part of October—the first part of November—as we could have done on the 16,000.

Senator BREWSTER. The men must live in that vicinity that you employ.

Mr. FENN. They live in Butler and in the immediate vicinity of Butler. We don't have in the construction of this car, sir, the labor difficulty that you would have in the construction, we will say, of airplane engines, where highly skilled mechanics are needed. Our difficulty in this whole thing, as far as manpower is concerned, is keymen, the retention of which the Army was as anxious to have as we were. They sent Major McAuliffe and Mr. Curry out there to make sure that these keymen could be retained if another order was given to us. As far as the men on the line are concerned, we need the second man as badly as we do the first, because all operations are grouped, but the third and fourth and fifth and sixth men can be taught in a matter of 4 or 5 days. By hook and crook we have kept all our No. 1 and No. 2 group men, or keymen.

I may elaborate a little bit on that in this way: We start off with the frame, and to it we add the rear springs and the front springs. All right; that is a group operation—hanging those springs. Then the axles are put on. That is another group operation. Then the brakes are put on, and that is another group operation. Then the engine is

dropped into the chassis from the second floor through a hole in the floor, and that is also a group operation. So it is the keyman in charge of those groups, you see, that it is important that we retain.

If you have two men in a group of five who know the operation from start to finish, then you are safe, and you are in production without any kinks in a matter of a week's time, and that has been our entire desire in this whole deal, to keep our keymen, because never up till now have we had any conception that this car, when it came to quantities, would be handled in any other way other than a negotiated way.

Senator BREWSTER. Your picture is, then, that your facilities and much of your personnel may be dissipated if the War Department follows a different policy.

Mr. FENN. If the policy is changed to one manufacturer, all these men will be out of work.

Senator BREWSTER. And I assume from the national standpoint there are some advantages in not too great concentration locally of our production.

Mr. FENN. I would say so.

Senator BREWSTER. And also we have been hearing something about small concerns, haven't we, getting a little business?

Mr. FENN. Well, there was a meeting in New York about that this week or last week, if I remember. We are not very large, but we have been awfully sincere and honest in producing this car.

The CHAIRMAN. It is your baby, isn't it?

Mr. FENN. It is our baby, and building the first one in 49 days meant day and night for about 12 or 15 of us.

Senator BREWSTER. I would think that perhaps the term applied not only to the car but to the producers.

Mr. FENN. Well, that is very gracious of you.

Senator MEAD. You don't mean they were Bantams.

The CHAIRMAN. If you hadn't had a fight with O. P. M., you might have gotten this contract?

Mr. FENN. I don't know many plants that have men on O. P. M. that aren't running 24 hours a day, do you?

The CHAIRMAN. That is what I am trying to find out. I know there are a lot of little plants that are not running that don't have representation on O. P. M., and I am trying to find out why they can't get some business.

Mr. FENN. The only thing I can say in connection with this whole thing is that it came as an extreme shock to us when the bid came out on an "all or none" basis, and, understand, the request for bids reached us on Monday and were opened the following Tuesday. We were simply caught, that's all. I think perhaps some of the others who have more people down here than we have, and more ears to the ground, were perhaps better informed and may have known what was coming, and we didn't.

I would like to get this into the record, if I may, that Mr. Payne's letter to Mr. Knudsen, in which he offered the complete facilities of our plant to the Government for the production of this car, or, for that matter, anything else, he made it very plain that we were willing to take anything in the way of a reasonable cost-plus profit if they wanted to work that way. We still are. In other words, we don't

want 10 percent—we want 4 percent, and we have a Federal comptroller in there——

The CHAIRMAN (interposing). In other words, you would be working it just the same as the Army works a lot of its contracts, on practically a cost-plus basis?

Mr. FENN. That is right. The man that is in there now is a Government man. If the Government wants to say to us, "All right; make them for 3 percent," the Government man is in there to tell them whether it is being done or not.

The CHAIRMAN. That is all, Mr. Fenn.

Colonel VAN DEUSEN. Will you be sworn, Colonel. Do you solemnly swear to tell the truth, the whole truth, and nothing but the truth?

**TESTIMONY OF LT. COL. EDWIN S. VAN DEUSEN, QUARTERMASTER,
CHIEF PROCUREMENT BRANCH, MOTOR TRANSPORT DIVISION,
QUARTERMASTER CORPS, WAR DEPARTMENT**

Colonel VAN DEUSEN. I do.

The CHAIRMAN. Colonel, will you give your title and connections to the reporter, please?

Colonel VAN DEUSEN. Lt. Col. Edwin S. Van Deusen, quartermaster, Chief Procurement Branch, Motor Transport Division, office of Quartermaster General.

DEVELOPMENT OF THE "JEEP" CAR

The CHAIRMAN. Colonel, you heard the testimony of Mr. Fenn. I would like very much for the record to have the Army's attitude and the history of this thing as far as the Army is concerned.

Colonel VAN DEUSEN. The history of the development of the truck is substantially as outlined by Mr. Fenn.

The original development, I believe, started with the Howie weapon carrier, so-called, and in 1937 Bantam approached the Army regarding requirements for vehicles of the type which they built. In 1939 the American Bantam Car Co. approached the ordnance district at Pittsburgh, after having submitted certain vehicles to the National Guard of Pennsylvania, and in September of that year offered units to the Quartermaster Corps for test.

As a result of the test of the three units that had previously been tested, they were advised that there appeared to be no further military requirement for that type of vehicle that they built.

In June of 1940, Mr. Payne, of the American Bantam Car Co., approached the Quartermaster Corps with respect to building a vehicle for particular adaptation as a reconnaissance car and possibly as a light weapons carrier. As a result of his efforts, there was developed in the using arms and services a requirement for a vehicle of light weight, with low silhouette, approaching that of the product offered by Bantam. The development of the car was undertaken after the Quartermaster Corps was given the responsibility for development, as a result of the meetings held by the ordnance technical committee at Butler and after inspection of the Bantam product. As a result of that meeting, military characteristics were approved, and on July 5,

1940, the procurement of 70 cars from any suitable manufacturer was authorized. Invitations for bid were issued for the procurement of the vehicles in accordance with the tentative specifications based on the approved military characteristics, and the award was made to the American Bantam Car Co. for building the 70.

In this bid, the Willys-Overland Co. was the low bidder but did not offer delivery under the provisions of the invitation for bids. The award was therefore made to Bantam at a higher cost, but on the basis of a quicker delivery.

Mr. FULTON. What was the weight specification?

Colonel VAN DEUSEN. The original weight specification in the invitation that was issued in July was that the weight of the truck, fully equipped and serviced, less only the pay load, shall not exceed 1,275 pounds, and every effort consistent with the best recognized engineering procedures shall be made to minimize the weight.

Mr. FULTON. Why was that specification inserted?

Colonel VAN DEUSEN. That provision was inserted in the specification because the ordnance committee recommendations were that the military characteristics should contain a requirement: Weight without pay load, 1,200 pounds.

Mr. FULTON. In other words, the military believed that there was a very definite necessity of keeping the weight as low as possible.

Colonel VAN DEUSEN. Throughout the entire program of these quarter-ton vehicles, there has been a feeling, particularly in the Infantry, that the weight should be kept to an absolute minimum.

The CHAIRMAN. You want that weight down for the simple reason that you want that car to be so that it could be handled by three men in the field when they get stuck. You want it so that they can get it out of the hole and push it over the hump.

Colonel VAN DEUSEN. That was the original intent of the Infantry, so that the crew of the car would be able to manhandle it—not necessarily pick it up, but assist it out of difficulties.

The CHAIRMAN. They can lift it out, because I have seen them do it.

Colonel VAN DEUSEN. As the car is presently built, the crew can manhandle the car out of difficulties; yes.

Mr. FULTON. When was the weight increased above that 1,275?

Colonel VAN DEUSEN. It became very evident during the development, which was undertaken by the Holabird Quartermaster Depot and the Bantam Car Co., in conjunction with the production of the first pilot model of the order for 70, that it would be physically impossible to meet the weight limitation of 1,275 pounds. Strength and material limitations and other engineering factors prohibited any car that was in sight meeting the 1,275-pound-weight limit.

Mr. FULTON. So it was increased to slightly over 2 000.

Colonel VAN DEUSEN. The final weight was 2,160 pounds. That is the top limit without pay load.

Mr. FULTON. For this 70-car bid?

Colonel VAN DEUSEN. No; there was no official change of the military characteristics from the 1,275 desideratum to the 2,160 until after the entire lot of 70 had been built by the Bantam Car Co.

Mr. FULTON. They were built at less than 2,160 pounds?

Colonel VAN DEUSEN. They were built at less than that.

Mr. FULTON. Somewhere around 1,235?

Colonel VAN DEUSEN. I don't have the exact figures.

The CHAIRMAN. Did the 70 prove out satisfactory?

Colonel VAN DEUSEN. Generally; yes.

Senator BREWSTER. I wonder if the colonel could complete his history of this thing. You got us up to the order of 70. Could you go on now with the next step?

COMPETITIVE BIDDING AND AWARDING OF CONTRACT FOR ARMY "JEEP" CARS

Colonel VAN DEUSEN. Following the order for the 70 cars and previous to the delivery of any pilot models, the Quartermaster Corps was directed to procure 1,500 additional trucks of this type from the American Bantam Car Co. In the meantime we had explored the field and we felt that it was an erroneous policy to go to one manufacturer when other manufacturers were in equal or possibly better position to furnish the vehicle that we required. We demurred on the directive to buy 1,500 trucks from the American Bantam Car Co.

Senator BREWSTER. Who was that directive from?

Colonel VAN DEUSEN. That directive was from The Adjutant General. The directive to buy 1,500 cars from the American Bantam Car Co. came after a Quartermaster Corps technical committee met and discussed the situation and decided that the Army should have 1,500 additional quarter-ton trucks for test purposes. That committee's recommendation was, on the recommendation of the Quartermaster Corps, that the 1,500 be split—500 to Willys, 500 to Ford, and 500 to Bantam—the 3 companies who had interest in manufacturing this type of vehicle.

Mr. FULTON. Had Willys or Ford at that time manufactured a single car, even for test purposes?

Colonel VAN DEUSEN. I would have to check the record on that. I don't believe they had actually delivered any cars; no.

Mr. FULTON. And did you have in mind that the number ultimately to be built would run into a good many thousand?

Colonel VAN DEUSEN. We did not know at that time.

Mr. FULTON. Fifteen hundred cars wouldn't be a big order.

Colonel VAN DEUSEN. This was a new type of vehicle, and the using arms and services felt that the 70 that we had bought were not sufficient to give them a complete picture of its tactical use, the suitability of the type for inclusion in the T. B. A.'s¹ as organizational equipment.

Mr. FULTON. But I mean 1,500 automobiles would only be a few weeks' job for any manufacturer, even a small one, wouldn't it?

Colonel VAN DEUSEN. It wouldn't be any great quantity of vehicles, certainly; but our policy has been, and is now, that we are not buying a pig in a poke.

Mr. FULTON. Then the 1,500 cars was itself an educational order.

Colonel VAN DEUSEN. The 1,500 cars were to be bought as experimental development type for service tests, quantity tests in service, to develop not only the suitability of the type but the tactical uses of the type.

Mr. FULTON. And that was because you wanted to experiment further before standardizing your specifications?

Colonel VAN DEUSEN. That is true.

¹ Tables of Basic Allowances.

Mr. FULTON. You felt that that was more important than getting the car?

Colonel VAN DEUSEN. That is true.

Senator BREWSTER. Now, if you will continue from that point where you had a directive to get 1,500 from Bantam, as I understood, before that you had the idea of spreading 1,500 to each of the three companies.

Colonel VAN DEUSEN. Yes, sir.

Senator BREWSTER. Tell us what happened there.

Colonel VAN DEUSEN. The Quartermaster Corps technical committee recommended that 1,500 of these trucks be procured, 500 each from Ford, Bantam, and Willys. The Quartermaster General was directed to procure 1,500 of these trucks from the American Bantam Car Co.

Senator BREWSTER. What happened there? You said the Quartermaster Corps decided one thing; and then how did The Adjutant General enter the picture?

Colonel VAN DEUSEN. Our recommendations must be passed on by the General Staff, and the directive to act comes to us from The Adjutant General.

Senator BREWSTER. And that Adjutant General's directive was a result of the action of the General Staff?

Colonel VAN DEUSEN. It must have been.

Senator BREWSTER. That is the only source it could have come from?

Colonel VAN DEUSEN. Yes, sir.

Senator BREWSTER. Who in the General Staff would review the decisions of the Quartermaster Corps?

Colonel VAN DEUSEN. G-4 or G-3, or both.

Mr. FULTON. Well, Colonel Van Deusen, the Chief of Infantry at that time wrote a strong nonconcurrence letter, praising the Bantam's cooperative attitude, did he not, stating that neither Ford nor Willys had helped the Army build the "jeep" car, and that the Infantry was opposed to the idea of trying new manufacturers without a test model? Are you aware of that?

Colonel VAN DEUSEN. The Infantry is not a procuring agency, and we do not feel that the Infantry, not being a procuring agency, is qualified to judge all those phases of procurement.

Mr. FULTON. The office of the Field Artillery on the same date expressed the same view, did it not?

Colonel VAN DEUSEN. We feel the same about the Field Artillery. They are not a supply arm or service.

Mr. FULTON. And the Cavalry also concurred specially and stated that they would agree to giving contracts to Ford and Willys, but only on the express condition that those companies should make pilot models.

Colonel VAN DEUSEN. That is true.

Mr. FULTON. And it was on the expressed opinion of those three branches of the service that the Chief of Staff took the position which he did?

Colonel VAN DEUSEN. I couldn't say as to that. I know nothing of the background of the decision of the Staff to direct the procurement for the 1,500 from Bantam.

Mr. FULTON. In any event, the O. P. M. did not approve the 1,500 order going to the Bantam, did they?

Colonel VAN DEUSEN. It was cleared later. There were three separate clearances involved. The Quartermaster Corps objected to the directive to procure 1,500 from the American Bantam Car Co. and, as early as November, stated our position. Foreseeing the probable wide acceptance of this vehicle, we felt that it would be advantageous to explore the productive capacity of this type of vehicle, and we were rather emphatic in our statement of the reasons for our desire to secure the three different types—the three different manufacturers' designs. However, we were, in spite of this statement of our position, directed to procure the 1,500 from Bantam.

Mr. FULTON. By the Chief of Staff?

Colonel VAN DEUSEN. By The Adjutant General; by the War Department.

Mr. FULTON. And it was at that point that the O. P. M. would be consulted to approve or disapprove the recommendations?

Colonel VAN DEUSEN. In carrying out the directive to procure the 1,500, we were required, because of the fact that the contract amounted to more than half a million dollars, to clear that award through the Office of Production Management at that time.

Senator BREWSTER. At what point would it go to them?

Colonel VAN DEUSEN. That would go to them after we had secured quotations and had evaluated the offering against the specifications.

Senator BREWSTER. That is, you go to the Bantam Co. and get what they would build these 1,500 cars for and, after you felt it was a reasonable proposition, you would then submit it to O. P. M.?

Colonel VAN DEUSEN. That procedure is in the case of a formal bid, where we issue the invitation based on specification. The quotations are received, the bids are received, and we then analyze those bids, and we arrive at a recommendation which is cleared, in the case of those awards that amount to more than a half million dollars, by the O. P. M.

Senator BREWSTER. That is, after your recommendation is completed, it then goes to O. P. M.?

Colonel VAN DEUSEN. We cannot make an award without clearance by the O. P. M. of the award if it is over half a million dollars.

Senator BREWSTER. Who, precisely, approved that in the O. P. M.?

Colonel VAN DEUSEN. At the present time, Donald M. Nelson, Director of Purchases.

Senator BREWSTER. He is the competent authority to clear you?

Colonel VAN DEUSEN. At the present time, yes. At that time Mr. Knudsen had delegated authority, which he had previously exerted personally, to Mr. Biggers.

Senator BREWSTER. So at the time of this 1,500 order, Mr. Biggers cleared it?

Colonel VAN DEUSEN. He was the competent authority to clear it.

Senator BREWSTER. What was his action on this particular item?

Colonel VAN DEUSEN. Might I refresh my memory?

Senator BREWSTER. Well, did they clear you?

Colonel VAN DEUSEN. Yes; they cleared us.

Senator BREWSTER. And you assume it was Mr. Biggers who cleared you?

Colonel VAN DEUSEN. I can check the record on that.

Senator BREWSTER. You needn't do that now.

Mr. FULTON. Didn't you get a letter from Mr. Biggers on November 14, stating that Mr. Knudsen had approved the Bantam contract on the assurance from the Deputy Chief of Staff that additional sources of supply would be assured by contracts to Ford and Willys, subject to approval of pilot models?

Colonel VAN DEUSEN. I have a copy of that letter—I believe the original letter—in my file.

Senator BREWSTER. Is that substantially correct?

Colonel VAN DEUSEN. That is substantially correct.

The CHAIRMAN. That will be made part of the record.

(The letter referred to was marked "Exhibit No. 95" and appears in the appendix on p. 2255.)

Mr. FULTON. And within a period of 2 or 3 weeks thereafter the Willys Co. was given an award for a like number of 1,500 cars, was it not?

Colonel VAN DEUSEN. Correct, there was a similar award of 1,500 cars made to Willys-Overland, Inc., and an award of 1,500 made to Ford Motor Co.

Mr. FULTON. Mr. Biggers' letter contained a qualification, "subject to approval of pilot models."

Colonel VAN DEUSEN. Correct.

Mr. FULTON. Did the Willys-Overland submit a pilot model which was approved before they started in production?

Colonel VAN DEUSEN. They did.

Mr. FULTON. And when did they submit that?

Colonel VAN DEUSEN. I would have to get the exact date. It was submitted—it must have been late in 1940. The exact date was November 24, I think. I am not sure.

Mr. FULTON. They actually had a car by November 24?

Colonel VAN DEUSEN. Yes; they had a car in Holabird which passed through the regular Holabird tests and performed very satisfactorily, but was overweight.

Mr. FULTON. But was overweight?

Colonel VAN DEUSEN. It was over the mutually agreed, although not finally approved, weight limitation, which had been set up during the development of the vehicle.

Senator MEAD. We have a statement here, if I may interject, according to the record which was given to me, which indicates that up to the present time, the Willys-Overland has not been required to submit a pilot model to the board of officers at Holabird, Md.

Colonel VAN DEUSEN. That is incorrect. Willys-Overland furnished a pilot model within a reasonable time after the award of contract for 1,500 vehicles to their company. That pilot model was put through the same and, I believe, even more complete tests than the original Bantam pilot model was.

Senator MEAD. Was the test at Holabird, Md.?

Colonel VAN DEUSEN. That is, the Holabird quartermaster depot at Baltimore, Md.

Mr. FULTON. And with respect to that test, it passed all except weight specification?

Colonel VAN DEUSEN. Generally the same as any pilot model does. The question of passing tests by pilot model is one that is not a question of always going through all tests 100 percent. When we make an award on a brand-new type of vehicle, a brand-new truck, the original pilot model, as a result of the tests through which it is placed or through which it runs, may indicate some minor modifications or changes that are necessary to make it meet the detailed specification requirements. I don't recall a single new production vehicle pilot model that has passed through those engineering tests that has not required some minor changes and in some cases, comparatively major changes, in order to make the vehicle completely comply with the specifications and be acceptable under the award.

Mr. FULTON. Do you know whether the reason why the Willys-Overland was heavier than your specifications was that they had a number of engines that they already had manufactured that they wanted to put into this type of car?

Colonel VAN DEUSEN. I do not believe that is true. The engine as used by Willys-Overland is the standard production engine that they use in their so-called Americar—their regular production of commercial vehicles.

Mr. FULTON. In other words, they wanted to use their standard engine?

Colonel VAN DEUSEN. That is correct.

Mr. FULTON. Even though it was a heavier engine by weight than the one that the Department Quartermaster Corps had been considering?

Colonel VAN DEUSEN. That is correct. In the Ford product, Ford uses the Ford four-cylinder tractor engine.

Mr. FULTON. Likewise standard.

Colonel VAN DEUSEN. And the Bantam Co. uses an engine produced by Continental Motors Corporation, and Willys-Overland has used their own commercial-production engine as used in their standard passenger cars.

Senator BREWSTER. Was the Continental motor developed for this or was it one already in production?

Colonel VAN DEUSEN. I believe it was a modification of an engine that they had in production. Just the extent of that modification, I couldn't evaluate at this time. I believe that they made some rather major modifications in one that was already in production, to adapt it to the Bantam car.

Senator BREWSTER. The Bantam Co. felt that that was of considerable importance. Didn't they have some discussion about the Ford or Willys motor?

Colonel VAN DEUSEN. I don't recall.

Mr. FULTON. With respect to performance of these three contracts: First, with respect to Bantam, did they get into production at an early date in satisfactory quantity to the War Department?

Colonel VAN DEUSEN. The Bantam and Ford production was cleared about the same date. I assume you are speaking about the order for 1,500. The Bantam and the Ford production was cleared about the same date. The Bantam car is an entirely assembled vehicle. Bantam does not make in its own factory any of the components that enter into that vehicle, with the exception of some brackets and some sub-

subsidiary small, minor parts. The Ford Co. makes its own engines and transmissions.

Senator MEAD. However, that doesn't enter into the consideration of the finished product by the War Department?

Colonel VAN DEUSEN. No.

Senator MEAD. If the Bantam Co. submits to subcontractors contracts for the assembling of parts, it has the tendency of spreading the work and giving more subcontractors and small contractors an opportunity to enter into the contract, whereas, in the case of Ford, they do all the work themselves; that is, centralizing the contract in one big outfit. However, that doesn't enter into the picture so far as the War Department is concerned.

Colonel VAN DEUSEN. It does to this extent, sir. The original purchase of these vehicles is not the final end of the story. We have to maintain them, and we have to be assured that the parts necessary for maintenance are in production and will continue in production. To that extent we are interested in the source of the components that go into any of the vehicles that we buy.

Senator MEAD. The record of the performance of the company, its stability, its relation with its employees—is that ever given any consideration?

Colonel VAN DEUSEN. Yes.

Senator MEAD. In the case of the Bantam Co., we understand that their record is very favorable; they have never had any disturbances there whatever.

Colonel VAN DEUSEN. Not that I know of.

Senator MEAD. And from some of the big contracts that have been awarded by the Department, they have in a number of cases run into serious difficulties of that kind. We get that from the daily record.

What is interesting to me—and I didn't want to pass it over without getting some explanation—is this. Your specifications were not squarely met by the Willys Co. in that they used their old production model engine. It was overweight. And then what happened? You accepted that overweight engine, or did you change your specifications to meet that obstacle?

Colonel VAN DEUSEN. I wouldn't describe the engine as their old production engine. The engine Willys uses is their standard production engine. That engine is about 80 pounds heavier, I believe, than either of the other two engines. The total weight that Willys was over was about 107 pounds, as I recall. The vehicle with that overweight was not accepted, and the Quartermaster Technical Committee recommended that the Willys' production be not released until they had satisfactorily reduced the weight within the limitation set—the 2,160 pounds. Willys then delayed somewhat in their production. That forced them into some major modifications of the original design that they had presented. They did, however, finally get that weight down within the limitation, and they started producing the vehicles, and they are now delivering under that contract.

Senator BREWSTER. Do they still use the same engine?

Colonel VAN DEUSEN. They still use the same engine.

Senator BREWSTER. That meant that they took 80 pounds out of the rest of the car which they put into their engine?

Colonel VAN DEUSEN. They made minor modifications in the vehicle to compensate for that weight. That was done in a number of different ways. They built the body in a little different form, using a single die for the floor, by which means they saved some weight. They used slightly lighter gages of sheet metal than the other makers did in certain parts where no stress or strain was involved. They were a little careful in clipping weight off bolts that weren't necessary, and did get the weight down.

Senator BREWSTER. To the amateur it appears if the Ford and the Bantam engines were adequate, that you have taken 80 pounds of virtue out of the rest, because why couldn't the Ford and the Bantam do all these things the Willys did, certainly in your new products?

Colonel VAN DEUSEN. I wouldn't say necessarily that they had taken anything out of the car by reducing the weight. Those are matters of engineering practice that I think you would appreciate that by substitution of a different alloy—

Senator BREWSTER (interposing). I am thinking now of the new cars which you are getting which might combine the virtues of all these. Apparently the Ford and Bantam have a very much lighter engine, which presumably is adequate.

Colonel VAN DEUSEN. All three offerings under the current award for 16,000 have been satisfactory so far as meeting our specifications are concerned. The Ford engine is 119 cubic inches, I believe. The engine offered by Bantam is 112 cubic inches. The engine offered by Willys is 139 cubic inches. Naturally the Willys engine has a little more torque or power and will give a little higher performance, and, in fact, the using services, particularly the Cavalry and Infantry Boards, are very pleased with the performance of the Willys, due to the fact that it has a slightly heavier, slightly more powerful engine and gives better acceleration.

Mr. FULTON. Is the drive shaft also heavier to take care of the heavier torque?

Colonel VAN DEUSEN. The axles under all three are practically the same. The axles under the Ford and the Bantam 1,500 were interchangeable. Those under the Willys differ slightly from those under the other two makes. The offset on the front drive axle is different, and the steering lay-out is different.

The safety factor in the axles is sufficient to take care of any of the engines or even a larger engine than that provided by Willys.

The CHAIRMAN. Wouldn't it be well to have that on a standard basis so that all these parts could be interchangeable at all times?

Colonel VAN DEUSEN. That is true, and that is one reason that the requirement for the current award was on an all-or-none basis.

Mr. FULTON. It wouldn't have to be in order to have them all interchangeable, would it?

Colonel VAN DEUSEN. It would not necessarily have to be.

Mr. FULTON. As I understand it, on the 14th and 17th of February the Chief of Cavalry and the Chief of Infantry both objected to the clearance on these Willys cars because they were too heavy and were using engines which the Chief of Infantry thought were outlets for motors already developed for commercial purposes. Is that true?

Colonel VAN DEUSEN. I would have to search the record to find that. I believe that that statement was made by the Infantry and the Cavalry.

Mr. FULTON. But they were overruled on the theory that the weight specifications should not at that time bar the Willys car.

Colonel VAN DEUSEN. That is correct.

Senator MEAD. Of course, those experts are only the experts or the officers of the experts that have to live with these cars, that have to fight with these cars.

Colonel VAN DEUSEN. They use them. They don't buy them and they don't have to maintain them.

Senator MEAD. If they make objection to the mechanical structure or the weight, why, that is none of their business, and, of course, that would probably be naturally overruled, because they have stepped outside of their realm of authority.

Colonel VAN DEUSEN. That is our position.

Senator MEAD. And so it was a bad day for the Bantam when the fellows who have to live with them and fight with them were just overruled because it was too much weight. You know, in some services they look for the advice and the expert opinion of the man who has to live with the thing, but I think we could win almost any war if we could get equipment through the various obstacles during the duration of the war and finally in production; but it occurs to me that there are so many obstacles and so many veto powers and so many O. P. M.'s that it would almost be miraculous for somebody to invent a helpful piece of equipment and finally get it under production in the same war that it was developed in.

The CHAIRMAN. It has never been done.

Colonel VAN DEUSEN. Our policy in the Quartermaster Corps has been to provide reasonably satisfactory equipment for the purpose intended within the time desired or required and at the rate required.

Mr. FULTON. Was that done?

Colonel VAN DEUSEN. We admit that a good deal of our motor transport equipment may not be ideal for the purpose. The ideal is attained only through a long period of development, test, and research.

The CHAIRMAN. That is the reason we used French 75's during the World War, wasn't it?

Colonel VAN DEUSEN. I am not an ordnance officer, sir.

The CHAIRMAN. I think that is the answer.

Colonel VAN DEUSEN. In 1933, the policy of procurement which was given to the Quartermaster Corps for motor vehicles was that motor vehicles of general purpose type, that is those that are procured by the Quartermaster would be those in commercial production with the least practicable change that would make them satisfactory for the purpose intended.

Senator BREWSTER. When was the subsequent model tried out? You said this first model of the Willys was satisfactory in the tests but was overweight. Now, was there subsequent test of the revised model?

Colonel VAN DEUSEN. Yes. To review the question that you asked before regarding delivery, Bantam and Ford were awarded contracts at about the same time. Ford Motor Co. secured the axles

from Spicer, the same as Bantam. Willys axles had to come out of Spicer. As a result of the loan of certain machine-tool equipment and assistance to Spicer by the Ford Motor Co., Ford although the award was made at the same time as that to Bantam, started delivering trucks on February 8. They shipped eight trucks on February 8, and then started to produce in fair quantities on March 3. Their volume shipments began on March 3. Bantam shipments began on March 31.

Mr. FULTON. In what quantities?

Colonel VAN DEUSEN. Ford started on March 3 daily shipments, 20, 20, 26, 26, 17, 31, and so on up to the peak of about 65 or 66.

Bantam's first shipment was on March 31, on which date 52 were shipped; their shipments run 52, 44, 20, 23, 22, 19, 61, 51, 40, and they reached about the same peak as Ford.

Mr. FULTON. How about Willys-Overland?

Colonel VAN DEUSEN. Willys-Overland did not start to deliver under their contracts until June 7.

Mr. FULTON. Several months after the others.

Colonel VAN DEUSEN. Correct.

The CHAIRMAN. Why did you stop Bantam from building them when they were in production?

Colonel VAN DEUSEN. As a result of a directive from The Adjutant General.

The CHAIRMAN. Where did that come from? Where did The Adjutant General get it; do you know?

Colonel VAN DEUSEN. I couldn't say, sir.

The CHAIRMAN. Did he get it from O. P. M.?

Colonel VAN DEUSEN. I could not say, sir.

Senator BREWSTER. When was the new Willys model tried out? That was the question I asked you.

Colonel VAN DEUSEN. June 1—you mean the one that met the weight?

Senator BREWSTER. Yes.

Colonel VAN DEUSEN. Early in June.

Senator BREWSTER. And that was given a thorough test at Holabird?

Colonel VAN DEUSEN. There was no second pilot model; no.

Senator BREWSTER. Well, then, did I understand that the model which you actually took from Willys-Overland never had the Holabird test?

Colonel VAN DEUSEN. Not the complete test—not the complete 30-day test.

Senator BREWSTER. Then that question which you asked—evidently your information was right.

Senator MEAD. What question was that?

Senator BREWSTER. The Willys-Overland finally used was never thoroughly tested.

Senator MEAD. That is the record I have.

Colonel VAN DEUSEN. There was no second pilot model. After the test of the first pilot model there was no second pilot model.

Senator BREWSTER. I can't understand, Colonel, how you can say that the car which you finally used had the thorough test. I understand it really didn't.

Colonel VAN DEUSEN. The units throughout the car were identical.

Senator BREWSTER. You mean you didn't make any change?

Colonel VAN DEUSEN. There were no changes in the component units of the car. The changes were in the form of the brackets—the method of manufacturing the floor.

Senator BREWSTER. You mean that you lightened that car by 160 pounds?

Colonel VAN DEUSEN. One hundred and seven pounds, I believe, was the weight taken out.

Senator BREWSTER. You took that out and had no further tests except your field tests?

Colonel VAN DEUSEN. We did not put it through a complete pilot model test at Holabird; no, sir. It was inspected.¹

Senator BREWSTER. Now, when was the policy changed to get cars, as under this 16,000 all from 1? When was that policy changed, and why?

Colonel VAN DEUSEN. That policy was expressed to us in a memorandum from the Under Secretary of War as a result of a memorandum from the Deputy Chief of Staff on July—wait a minute—on July 8.

Senator BREWSTER. And what did that say? Simply a directive?

Colonel VAN DEUSEN. On July 8 the Deputy Chief of Staff wrote a memorandum to the Under Secretary of War—subject: Procurement of trucks, one-quarter ton, 4 by 4:

1. Reference the current directive to the Quartermaster General for the immediate procurement of initial requirements of the recently standardized truck, one-quarter ton, 4 by 4, special attention is invited to two essentials for consideration in the procurement of this vehicle:

(a) It is essential that the design of these vehicles be frozen and that complete interchangeability of parts be secured in the further quantities procured during the period of the current emergency.

(b) The military situation is such that the delivery of these trucks into the hands of troops must be accomplished with the maximum possible speed.

2. In the placing of contracts for these vehicles by the Quartermaster Corps, it is essential that awards be made to manufacturers whose productive capacity is such as to assure delivery of the minimum requirements at the highest attainable rate of delivery. It is desired, if possible, that these minimum requirements be secured for delivery within the succeeding 6 months.

R. C. MOORE,
Major General,
Deputy Chief of Staff.

That was passed to the Quartermaster General by a memorandum from the Under Secretary of War of the same date.

Memorandum to the Quartermaster General:

Attached is a memorandum from General Moore to the effect that on the quarter-ton truck 4 by 4 it is essential that there be complete interchangeability of parts in the further quantities to be procured, and that deliveries be accomplished with the maximum speed within 6 months, if possible. Please be guided accordingly in the procurement of trucks of this type.

ROBERT PATTERSON,
Under Secretary of War.

This is in entire accord with the Quartermaster Corps with respect to standardization of vehicles, which is a very important factor in our field maintenance.

¹ Col. Van Deusen subsequently informed the Committee that: "Neither Ford, Bantam, nor Willys production models were retested, as this is not our standard procedure."

Senator BREWSTER. Does that indicate any change of policy as far as the Quartermaster Corps was concerned from your original idea of distribution?

Colonel VAN DEUSEN. No.

Senator BREWSTER. Well, I thought you wanted three sources.

Colonel VAN DEUSEN. We wanted three sources in connection with the development and service test of these to determine what a suitable vehicle would be and whether any one of the three manufacturers would build a suitable vehicle.

Senator MEAD. And then, Colonel, once you established that was a suitable model, it would be very easy for you to standardize it, and once it was standardized, it would be easy for the three plants to produce them according to your standardized specification. So why determine to eliminate two in favor of one plant when the need is so great and so instant?

Colonel VAN DEUSEN. That is true where you are building and buying to a design. We are not building and buying to a design. We are buying commercially produced units.

Senator MEAD. Yes; but why wouldn't you standardize them? You were looking for a model that would meet with your specifications, your tests. Why couldn't you standardize them and why couldn't you, as long as you needed them, thousands of them, allow a pioneering company already in the field to participate in the production of this standardized model?

Colonel VAN DEUSEN. We could standardize if we were to specify the engine will be Continental, model so-and-so, the transfer case and transmission shall be Spicer or Warner's, model so-and-so, the axle shall be Timken or Spicer, model so-and-so.

Senator MEAD. Or equivalent, or something of that sort.

Colonel VAN DEUSEN. If you put the word "or equal" in there, you can't force the procurement of the type to secure the standardization. There is only one way of attaining completed standardization, and that is to draw on the board the item in complete detail and force everybody to make that item. When you are buying commercial items, there is a different combination by different manufacturers, any one of which may meet the specification and give you a satisfactory vehicle.

Senator MEAD. So that on one occasion we have the Assistant Secretary up here and he tells us that under his directives he won't allow any loans for plant expansion or for the purpose of new machines if there is plant and machines already available for a given contract.

Colonel VAN DEUSEN. That is true, and that is one of the points that I want to bring out.

Senator MEAD. There are so many things true that one can't understand the truisms of all of them when one tries to fit them together.

Now, we have another witness who tells us—and this is evidently true, too—that in order to get a certain design it is absolutely necessary to put one completely out of business, with its plant, its machinery, and its skilled workers, and allow another company which has been enjoying the inertia of bankruptcy, and with cobwebs and rust around the plant and machines, to go to the Government and get a loan of \$3,000,000, so that the Government actually is going into the business of putting a pioneering company completely out of business.

The CHAIRMAN. One that it financed itself.

Senator MEAD. And that is the policy of the War Department, which just a few days ago came before this committee and said, "Oh, we spread all the contracts." I wonder whether it is spreading the contracts or spreading something else that is actually being done in reality.

Colonel VAN DEUSEN. I have no comment to make on that.

Senator MEAD. Colonel, this isn't meant for criticism of you or your work. You are just a cog in a machine, and you are doing your bit.

The CHAIRMAN. We are criticizing policy. It is a very evident one.

Senator MEAD. It is a policy that really merits strong criticism. Here is a passage in a letter which I have, and it goes on to say:

Too many people have a finger in the Bantam pie. Everyone and everything from the United States Senate down to the lowest clerk in the War Department has at one time or another—

That was evidently written before these hearings took place—
made some decision or remark with regard to this car.

Then it goes on to say:

Too much time is being wasted waiting for a test of the 4,500 order. A further test is entirely unnecessary.

Then it goes on to say:

Work was started on the development of the Bantam type of car over a year ago—

and that bears out the remark I made that you can't develop a fighting unit in one war and successfully use it before the war is over under present red-tape set-up.

Then it goes on to say:

By last September it was a well-known fact that this type of car was the answer to everyone's demands for a light reconnaissance vehicle.

Then it goes on to say that "training of cavalry units has been seriously hampered." That doesn't make any difference; we have just got to adjust this 80-pound weight; these fellows only have to live with the car, and we pass on the technical requirements. If they say, "We want this kind of car," they are usurping their authority. We will give them a boat and let them sail around in a boat rather than a car.

Then it goes on to say that the cavalry requires 1,100 of these vehicles to be used in lieu of tricycles. Let them use tricycles.

Now, I wonder who said this? He goes on to say:

At this time 57 cars have been issued.

Think of the magnificent mass-production volume. Under the direction of the technical staff of the War Department, we got out 57.

Seventy-four are expected for issue during June and July, and an additional 213 might come in September.

I want to tell you, if Joe Stalin doesn't stall that fellow Adolf over there in the snows of Russia, we will be short a few "jeeps" when the time comes.

I want to tell you this isn't a Congressman that is criticizing. This isn't the Bantam Car Co. looking for an adjustment of a grievance. This letter is signed by the major general of the United States, chief of Cavalry, and I think it should be considered by the Department; and it is high time that we got every plant that can make "jeeps" under full mass-production order.

Colonel VAN DEUSEN. If that letter was signed by General Herr, he is not acquainted with some of the facts in the case.

Senator MEAD. Probably that is what is the trouble with us. We get acquainted with too many facts and too many people.

Colonel VAN DEUSEN. The quarter-ton truck was delivered by Ford, starting March 3, under their contract for 1,500. In spite of a strike at the Spicer Manufacturing Co. that began on April 2 and a strike at the Ford Motor Co. that began on April 4, those strikes ending on April 22, Ford Motor Co. completed delivery of their entire 1,500, with the exception of 2, which had been diverted to defense-aid requirements on May 19, 1941.

The CHAIRMAN. Colonel, we will have to bring this hearing to a close, because the Senate is calling for votes.

Senator BREWSTER. Is the colonel going to continue tomorrow?

The CHAIRMAN. Yes; he can continue tomorrow.

Senator BREWSTER. The question which still strikes me, Colonel, on which I would like to have your discussion, is that it seems to me the Ford Motor Co. and the Continental Motor were roughly competitive, comparatively light notes; the Overland was 80 pounds heavier. It either was a good idea to have the 80-pound weight and power or it wasn't. I can't conceive that, in a thing of this refinement, either would do. I think the thing should be settled, and then when it is settled either one or the other type secured. If you took 80 pounds out of the rest of the car to give it to the engine, it certainly changed the whole balance of the situation. You could have had competition from Ford and Bantam, but you didn't have a competitive product from Willys. Either the Willys was better or it was worse—I don't know which, from the technical standpoint—and it seems to me as though Willys have got a rather advantageous arrangement as a result of this.

Colonel VAN DEUSEN. Technically, as a result of the tests, all three of those products met the specifications.

The CHAIRMAN. Which car do you think is the best, Colonel?

Colonel VAN DEUSEN. Any one of the three will do the job.

The CHAIRMAN. Tomorrow we will hear Generals Tyner, Seaman, and Hartman; and if you desire to hear the colonel, he will come back, and we will start with him. Next week we will investigate the lobbying facilities of O. P. M. in connection with contracts that have been let for the Federal Government.

(Whereupon, at 12:15 p. m., the committee recessed until 10:30 a. m. Thursday, August 7, 1941.)

INVESTIGATION OF THE NATIONAL DEFENSE PROGRAM

THURSDAY, AUGUST 7, 1941

UNITED STATES SENATE,
SPECIAL COMMITTEE TO INVESTIGATE
THE NATIONAL DEFENSE PROGRAM,
Washington, D. C.

The committee met at 10:40 a. m. pursuant to adjournment on Wednesday, August 6, 1941, in room 318, Senate Office Building, Senator Harry S. Truman, of Missouri, presiding.

Present: Senators Harry S. Truman (chairman), Mon C. Wallgren, and James M. Mead.

Also present: Hugh A. Fulton, chief counsel; Charles P. Clark, associate chief counsel.

The CHAIRMAN. The committee will come to order.

General Tyner will be the first witness. General, will you be sworn, please? Do you solemnly swear that the testimony you will give will be the truth, the whole truth, and nothing but the truth, so help you God?

General TYNER. I do.

The CHAIRMAN. General, will you have that seat there and give the reporter your name, rank, and connections with the War Department in times past?

General TYNER. George P. Tyner, brigadier general, retired.

TESTIMONY OF BRIG. GEN. GEORGE TYNER, RETIRED, G-3 AND G-4, GENERAL STAFF, UNITED STATES ARMY

The CHAIRMAN. General, you were connected with the General Staff of the United States Army for a time, were you not?

General TYNER. I have served four details on the staff, sir, three in the War Department—part of the first was in Europe—and one as Chief of Staff of a Corps Area.

The CHAIRMAN. Your connections with the War Department were in the Construction Division and in the Plans and Training, were they not?

General TYNER. Well, sir, if I may change that, I was never in the Construction Division.

The CHAIRMAN. I mean you were in G-4—that has to do with construction—were you not?

General TYNER. I served in G-4 when I came back from France, and I came back to G-4 and served for 4 years from '23 to '27, and there I had the General Staff part of the War Department budget, and I came back in '36 and served G-3 and then I was made G-3 in April

'37, then I was made G-4 in March '39 and I left on leave for retirement in January '40.

The CHAIRMAN. You were also Chief of the Construction Division for the C. C. C. camps, were you not?

General TYNER. I was the War Department representative for everything connected with the C. C. C. in which the War Department engaged.

LACK OF PRE-EMERGENCY PLANNING FOR CAMP CONSTRUCTION

The CHAIRMAN. While you were in G-3 in the Plans Section of the War Department, was any effort made to create plans for an emergency that might come on the country at any time in the future?

General TYNER. Yes, sir; there was a complete mobilization plan for the use of the Regular Army and the National Guard, and for replacement, and then there was a plan which visualized the use of the Organized Reserves at a later period.

The CHAIRMAN. Was there any plan for camp construction?

General TYNER. The plan at that time, in '38, 1938, was the use of the Regular Army and the National Guard and replacements to bring them to war strength. The Regular Army was mobilized at its home station, and then went to the front, the theater of operations, according to whatever war plan was to go into operation at that time. The inactive units of the Regular Army were to be activated in the space vacated by the active units; the National Guard divisions were to go to their State camp grounds, except if it was wintertime some of them would go to the South.

The CHAIRMAN. Were any plans made for camp sites?

General TYNER. Yes.

The CHAIRMAN. To be used for mobilization?

General TYNER. The Regular Army was on the reservations and the National Guard was on the State camp grounds except in some cases where they went to the South and then they would go on Army reservations.

The CHAIRMAN. Were plans made for the construction of the camps?

General TYNER. They were all tent camps in the South.

The CHAIRMAN. They didn't have any construction plans for them?

General TYNER. Yes; they had plans for barracks; the Quartermaster General had plans for barracks, and, in fact, they were used at the time that we received money to increase the Air Corps and to build Air Corps stations, and the idea was they didn't have time to build permanent quarters; that is, they were going to put temporary quarters up first; so the plans of the Quartermaster General for cantonment construction were used for the Air Corps.

The CHAIRMAN. What became of those plans in the construction of these cantonments we have been looking into? They didn't seem to have very many plans for the construction of those camps.

General TYNER. I left in January 1940, sir.

The CHAIRMAN. Proceed.

Mr. FULTON. General Tyner, as Chief of G-3 of the Staff, you had to do with the site selection of camps, did you not?

General TYNER. That is right.

Mr. FULTON. Did you prepare any detailed plans for the investigation of sites on which they could build cantonments, and if so, what happened to them?

General TYNER. Cantonments were not contemplated.

Mr. FULTON. In other words, you didn't even contemplate at all that we might want to build some camps on these cantonments.

General TYNER. Would you please repeat that?

Mr. FULTON. In other words, you didn't contemplate that the Army might want to build some camps?

General TYNER. We contemplated that the Army would have a camp for all of the troops in the Regular Army and the National Guard and later that would be used by the Organized Reserves. We had a plan for every camp.

Mr. FULTON. What kind of plan did you have for Camp Blanding?

General TYNER. We didn't have any plan for Camp Blanding because the Camp Blanding question didn't come up until the summer of 1939, when the Navy took over the Florida State camp ground; I think they called it Camp Foster. The money was then given to the State to purchase another camp site, and the State and fourth corps area plus an officer from my office selected a site which is southwest of Jacksonville and which the State was going to use for a State campground.

Mr. FULTON. What kind of camp was that to be?

General TYNER. A regular National Guard camp.

Mr. FULTON. For about 2,000 people?

General TYNER. That is right.

Mr. FULTON. What kind of plans did you have for a camp similar to the present Camp Blanding in that area?

General TYNER. We didn't contemplate any camp like they have now in that area.

Mr. FULTON. And the same would be true of almost all the other camps that have been built—Leonard Wood and the numerous other camps that we have been investigating? There were no plans for such camps in those areas?

General TYNER. We had plans to put the Regular Army and the National Guard in the field.

Mr. FULTON. In other words, in a theater of war over in Europe, or some such thing as that.

General TYNER. No; there could be a theater of war on this continent, but the idea was that the troops went to the front.

Mr. FULTON. And you had no plan which contemplated that the troops might not immediately go to the front?

General TYNER. We had no plans which contemplated a large Army in time of peace; that is, in barracks.

Mr. FULTON. Or in time of war in barracks.

General TYNER. That is right.

The CHAIRMAN. What plans did you have for training these troops? They would have to be trained before they would be sent to the front, wouldn't they, General?

General TYNER. The idea was that the Regular Army would go to the front at once, followed by the National Guard, and then the replacements would join them behind the front line.

The CHAIRMAN. And they would all go without training.

General TYNER. They would not go without training. The Regular Army would go as it was at that time and the National Guard would go as it was at that time. The idea of the plan was that we only brought in as many troops as we had equipment for, and we were going to use the Regular Army and the National Guard as the initial protective force.

Mr. FULTON. Because you didn't have equipment, you considered it wouldn't be necessary to plan for training of the troops; that is, you didn't need to house troops, because you didn't have the equipment to give them, in the first place.

General TYNER. The troops that we had available in the Regular Army and the National Guard we had a plan for housing. The Regular Army was on Army posts and the National Guard was in the summer training camps.

Mr. FULTON. But, General, did you go through the World War as an officer?

General TYNER. I was on the War Department General Staff just after the beginning of the World War; in France, I was assistant G-4 of the First Army; I was G-4 of the Second and Third Armies in France and Germany.

Mr. FULTON. And in the World War was it necessary for the United States to build barracks and large cantonments?

General TYNER. Yes.

Mr. FULTON. To house hundreds of thousands of soldiers?

General TYNER. Yes.

Mr. FULTON. And you didn't even conceive of the possibility that we might want to do that again?

General TYNER. No; because we expected to use our shelter over and over, you see. We expected to use the shelter by units vacating and going to the front.

Mr. FULTON. And I take it you didn't even conceive of the possibility that we would want to do again what we did do in the World War.

General TYNER. We didn't want to do what we did in the World War, for the reason that in the World War we kept the troops over the winter in these cantonments, and our plan that we had for this thing was that the troops would go into the theater of operations within 30 days.

Mr. FULTON. You had one plan and one plan only.

General TYNER. That is right.

Mr. FULTON. You gave no thought to the possibility that there might be a necessity for having another plan.

General TYNER. Well, if you are bringing out the question of our having a large force in barracks in time of peace, we never contemplated that we would be permitted to have a large force in barracks in time of peace.

Mr. FULTON. Or in time of war.

General TYNER. In time of war we expected that they would be at the front and not in barracks.

Mr. FULTON. But they weren't in the last war, were they?

General TYNER. Yes; they went to the front just as soon as they could get ships for them and get clothing and materials for them.

Mr. FULTON. There were more men in camps than there ever were at the front, weren't there?

General TYNER. No; I think there were more men in France than there were in this country, but I am not sure, because I was in Europe.

Mr. FULTON. At least there were more than a million men in camps in the last war.

General TYNER. Oh, yes.

Mr. FULTON. Well, now, since you didn't conceive of the possibility that you would want camps, I assume that you didn't investigate camp sites for the purpose of determining whether they would be suitable for camps.

General TYNER. All those sites that we picked out were picked out by the corps area commanders and were considered suitable by us.

Mr. FULTON. They were not picked out for camps; they were picked out for National Guard areas for a couple of thousand people.

General TYNER. They already existed except in two or three cases.

Mr. FULTON. But you were picking them out for National Guard people with a couple of thousand people in tents rather than big cantonments.

General TYNER. We picked them out for the National Guard troops and the plan that we had brought the National Guard Divisions together. The peace strength of the division was around eight or ten thousand, and the war strength was around 20,000, of each division.

Mr. FULTON. In other words, you picked them out for a purpose entirely different from the one they are now being used for.

General TYNER. No, I don't think so.

Mr. FULTON. Well, I thought you told me that you didn't even conceive of the idea that you would be building large cantonments.

General TYNER. Yes, but you see the way I discuss a cantonment is different from the way you discuss a cantonment. My idea of a cantonment is frame buildings which have more or less permanency, and the camps that I have been telling you that we prepared for were tent camps in which the troops would live in tents.

Mr. FULTON. Camp Blanding is a tent camp, isn't it?

General TYNER. Yes; and the plan that we had for Camp Blanding was to take care of the National Guard of Florida, only the National Guard of Florida.

Mr. FULTON. My point was that in selecting that as a suitable camp you didn't even consider it on the basis of a camp for 50,000 people, such as it is now.

General TYNER. Well, as I remember the size of that reservation, it was a very large reservation and capable of a much larger force than the small National Guard of Florida, but we never contemplated using it for anything other than the National Guard of Florida as a summer training camp. The National Guard of Florida was not to go into Camp Blanding under our plan in time of war.

Mr. FULTON. And isn't that true generally of all these camp sites, that they were selected with the idea that they would be used for small groups of National Guard people without permanent utilities and roads and things of that character, that they were not selected at all with the idea that they were to be used for large camps of the type that has now been constructed on them?

General TYNER. The plan that we had was—I haven't the plan here with me, but we had 18 National Guard Divisions which were to be assembled and placed in one camp, and that camp was to be a tent

camp unless it was in the winter, when, as I remember it, the Twenty-eighth Division and the Twenty-seventh Division were to go South. The Twenty-eighth is the Pennsylvania Division; the Twenty-seventh, the New York Division. Now each of these divisions were to be in one spot. In some cases, the site of the division camp was the State camp ground for the troops of that State; in other cases it was not.

Senator WALLGREN. You mean, General, each division was to be in a separate camp?

General TYNER. Each division was to be in a separate camp and in some cases the camp of the division was the State campground for that part of the division which belonged to that State.

Senator WALLGREN. There would have been a total of 18 division camps.

General TYNER. Correct sir; for the National Guard Infantry Divisions.

Mr. FULTON. Those would have been camps with tents and without permanent utilities.

General TYNER. They were to have—well, I am not sure about how far the sewerage ran in those camps. I think it was an extension of the camp as it existed.

Mr. FULTON. Well, what plans did you make for providing sewerage in those camps?

General TYNER. The corps area commander had plans for each one of those divisions which was in his corps area.

Mr. FULTON. Did you review those plans?

General TYNER. I don't know how much they were reviewed. We knew that the plans existed, but I can't answer because I don't remember.

Mr. FULTON. You don't remember whether you ever reviewed them yourself?

General TYNER. The plans for the sewerage of any particular camp?

Mr. FULTON. For the public utilities in general, drainage, sewerage, roads, railroads, and those things.

General TYNER. Those all existed in the camps. Well, I can't say that I reviewed them; no.

Mr. FULTON. If they had existed, where did they go?

General TYNER. In the corps area; they were kept in the corps area. The plans of the corps area were sent to the War Department and they were reviewed in the War Department.

Mr. FULTON. What became of those plans?

General TYNER. I don't know what became of them.

Mr. FULTON. Do you consider those plans adequate for public utilities for those area camps?

General TYNER. For the time the troops were to occupy them, I did, because these camps that you are now discussing were to be vacated after the National Guard had gone to the front.

Mr. FULTON. And the National Guard was to go to the front in 30 days, I believe.

General TYNER. Well, I don't know. I would have to look in the plan to see how fast they would depart.

Mr. FULTON. It was within a month or two, was it not?

General TYNER. That is right.

Mr. FULTON. So you were talking about temporary camps for 30 days or 2 months.

General TYNER. That is right. Now, the part that was to be used over and over again was on Army reservations.

Mr. FULTON. The 130 or 140 different reservations that were regular posts?

General TYNER. I don't know, I would have to look at the plan, but we had a complete station list where every unit of the Regular Army went to for mobilization, and where every inactive unit of the Regular Army was activated. You would have to get the plan out and look at that.

Mr. FULTON. And then with respect to G-4, one of the things that G-4 had to do was construction; was it not, of any—

General TYNER (interposing). No; G-4 got out the policies for construction. The construction was done by the Quartermaster General's office.

Mr. FULTON. In determining the policy for construction, did you have prepared any plans for typical mess halls or barracks?

General TYNER. The Quartermaster General did, because when we got this money for the Air Corps and increased the Air Corps, he used those immediately.

Mr. FULTON. When was the first time that the Quartermaster General, so far as you knew it, had any plans for any barracks and mess halls?

General TYNER. I don't know when he first had them; I know that they were in existence, and when we had this chance to build this housing at new Air Corps stations that he used them immediately.

Mr. FULTON. When determining Staff policy on construction, didn't you review to find out whether there were plans?

General TYNER. Yes; there were—

Mr. FULTON (interposing). And whether they were adequate?

General TYNER. The plans that we had were for tent camps in the National Guard camps, and for where we were going to build barracks he had the plans for the barracks because he used them.

Mr. FULTON. Are you sure there were any plans for barracks when you became head of construction there in G-4?

General TYNER. Will you please say that again?

Mr. FULTON. Are you sure the Army had any plans for mess halls and barracks at the time that you were in charge of G-4?

General TYNER. Well, General Baade is here, and he was the head of that section, and General Hartman is here, who was also the head of that section, and they were both under me, and if permitted I would rather they answered the question because they had them right in their office.

Mr. FULTON. My question was whether you as head of G-4 took the trouble to find out whether they did have such plans.

General TYNER. My idea was that they did have plans and that they had the plans that I have explained to you.

The CHAIRMAN. You didn't know from your own knowledge that they had them, did you, General? Did you ever see them?

General TYNER. Did I ever see the plan, the lay-out for the National Guard camps?

The CHAIRMAN. The lay-out for any camp, I don't care whether it was National Guard, Regular Army, or whatever kind of camp. Did you ever see the plans for the lay-out of the camp for the training of troops—construction of mess halls and things of that sort?

General TYNER. Oh, yes. I saw them.

Mr. FULTON. What kind of plans were they, General?

General TYNER. Well, they were what we call the type mess hall, type bathhouse, and type kitchen.

Mr. FULTON. Take the type mess hall. What state were those plans in? Did they have bills of materials?

General TYNER. As I remember it, those that I saw had a blueprint of the plan, and over at one side was a bill of material, so many 2 by 4's, and all the other stuff, the amount of material required.

Mr. FULTON. And when did you see plans of that character—at the beginning of your incumbency?

General TYNER. I think they had them before I went to G-4. I went to G-4 in March 1938.

Mr. FULTON. Did the question ever come before you of the possibility of getting funds from the W. P. A.¹ or elsewhere to prepare plans for camps and cantonments, typical buildings, mess halls, barracks, and so on?

General TYNER. We had plans, as I have just repeated; we got money from the W. P. A., and that was used to draw plans for the permanent Army construction, for which we had an appropriation.

Mr. FULTON. When did you get that money?

General TYNER. I can't answer. Colonel Wilson, who is here in the room, can answer, because he remembers when we got it.

Mr. FULTON. Can you tell us, Colonel, when you got that money?

Colonel WILSON.² In December of 1938, December 8.

Mr. FULTON. And prior to that time, General, did you expend any funds on preparing any plans?

General TYNER. We only expended the funds that we had for employees who were on the permanent roll. We had no money to hire any employees or make any investigations of any kind, except for the permanent pay roll, permanent office force.

Mr. FULTON. Did you apply for any money for the purpose of making plans?

General TYNER. No; there were too many things—the amount of money that we were permitted to ask for was insufficient for our requirements, and where we did have any spare money we put it into ammunition.

Mr. FULTON. What were these requirements that were more important in your division than that of making plans for training and housing troops in time of war?

General TYNER. We had plans for the troops that we were going to use in time of war, as I told you before, and the question as to investigating any camp sites, we didn't have any money to investigate camp sites, for the reason that your fixed charges in the War Department were such that after you got through with your fixed

¹ See infra, p. 2033, for discussion of Work Projects Administration funds available for use by the Quartermaster General. See also Exhibit No. 96, appendix, p. 2255 et seq. and supplemental data, appendix, pp. 2308-2312.

² Arthur R. Wilson, General Staff Corps, U. S. Army.

charges, such as pay, rations, clothing, well, all of the fixed things that are in the War Department, the civilian components, that the amount of money that you had to place for any special purpose was very, very small, and whenever we could get any money we put it into ammunition and artillery.

Mr. FULTON. Did you ever take the position personally that there should be money made available for such planning?

General TYNER. Planning for what?

Mr. FULTON. Planning for camps and training facilities for soldiers.

General TYNER. We did have plans for camps and for training facilities for soldiers, as I have just enumerated, for 18 National Guard divisions and for 9 Regular Army divisions, which is 27 divisions in the first increment.

Mr. FULTON. I just wanted to develop that you thought you had sufficient plans and it wasn't necessary to ask for more funds for other types of planning.

General TYNER. We didn't need any other types of plans. I think that we had good plans and I think our plans were in very fine shape.

Mr. FULTON. Now, what plans did you have, for example, on site location for the purpose of ascertaining drainage questions?

General TYNER. The plans we had for sites that were not occupied at that time were in the hands of the corps area commanders.

Mr. FULTON. Would it have cost you more than a few dollars to have obtained at least the Government topographical surveys of those areas?

General TYNER. Well, I have just learned that the War Department has been given \$15,000,000 for the purpose of making some plans for some camps, and we never envisioned any such sum of money as that.¹

The CHAIRMAN. That was a lock on the stable after the horse had been stolen, General. What we are trying to find out is what the War Department has done over the past 20 years to sort of meet this situation which now stares them in the face; the situation which I, as a Reserve officer, had supposed that they had investigated. From what I could find out, there weren't any plans in existence that were available for use; those that they did have were thrown out the window and were not used. I want to know what you did, as head of G-3, to prepare plans for just such a situation as is staring us in the face now. It has cost the Government more than a hundred million dollars in the construction of these camps, because we didn't have plans.

General TYNER. Well, in the first place, we did not contemplate that there would be a million and a half men in barracks in time of peace.²

The CHAIRMAN. But shouldn't you have contemplated that?

General TYNER. I don't think so.

The CHAIRMAN. Shouldn't you have contemplated that? My goodness gracious, when we went to mobilize an army in 1917 we mobilized more than a million and a half men; in 1917 we had more than 2,000,000 men in camp here and 2,000,000 men in camps in France, and it seems to me, looking over that experience, it ought to have been your

¹ In this connection see supplemental data, appendix, p. 2308, at p. 2309.

² Idem.

business to contemplate the very thing that we are doing now when we had to mobilize. How in the world are we going to mobilize if we don't have any place to put these men?

General TYNER. We were going to mobilize by using over and over again the facilities of Regular Army posts and the other troops were going to be in the front line.

The CHAIRMAN. Well, if you used those facilities over and over again, 18 divisions, 20,000 men to a division, you couldn't begin to take care of a million five hundred thousand.

General TYNER. We didn't plan to have the 18 divisions in Regular Army posts, sir; we planned to put them in the original camp and then to send them to the front.

The CHAIRMAN. Even if you had them in those camps you would have to spend some time in those camps, General, before you would send those men to the front.

General TYNER. That is right.

The CHAIRMAN. Even in the World War, when we were sending them to the front on broomstick training we kept them at camp at least 3 months.

General TYNER. Our plan was that these troops were going to the front immediately and replacements were going to follow them up, and as a division would come out of the line we would fill them with replacements and they would go back again to the front.

Senator WALLGREN. How much time were you allowing for the training of these men?

General TYNER. I would have to look in the plans to see just how many months we allowed for the training of the replacements.

Senator WALLGREN. Getting back to these 18 camps, can you furnish the committee with a list of those camps, where they were, and the size of them?

General TYNER. It is in the hearings, because I saw it in the hearings.¹

Mr. FULTON. Present mobilization plan.

General TYNER. 1938 mobilization plan.

Senator WALLGREN. I see.

Mr. FULTON. That plan, as he states, contemplated that the Regular Army would proceed at once to the theater of operation, thereby vacating that post.

Senator WALLGREN. Hoping that it would last long enough to train another one.

Mr. FULTON. And the National Guard would proceed in about a month or 3 months, and then we would have 350,000 maximum new soldiers being trained at these posts in the interval. Isn't that correct, General?

General TYNER. That is right.

The CHAIRMAN. The facts in the case, General, are that it was an Indian-war plan and not a modern World War plan.

General TYNER. No, sir. I am sorry that I can't agree to that. I think that the plan of mobilization was a good plan.

The CHAIRMAN. It hasn't worked out very satisfactorily.

¹ Various protective mobilization plans were entered in the record and are on file with the committee. See schedule of exhibits in Hearings, Part 1.

General TYNER. Because, in the first place, the reason it hasn't worked out is this.

The plan did not contemplate that the troops would go into barracks and stay there in barracks, waiting to go to war.

The CHAIRMAN. But they did that in the World War; they did that very thing in the World War, for I was in it.

General TYNER. That is true. I wasn't out in the cantonments, but I was here in the War Department.

The CHAIRMAN. I was in cantonments, both here and in France. We did that very thing.

General TYNER. We thought in this plan that we had that we did not need these large cantonments, and we thought that our plan was correct. Now what has happened here in this situation is that you have a large Army, and you have it in barracks in time of peace and not in active operations, not in a state of war, that is, there is no front line, so to speak.

The CHAIRMAN. But you have to train those troops no matter when you bring them together. If you haven't a trained army already, you can't send it to the front.

General TYNER. We were going to train the 18 National Guard divisions at these that I have enumerated. We were going to train the Regular Army on the Army reservations.

Senator WALLGREN. Did you have enough territory, enough acreage, in these camp sites to train your National Guard units?

General TYNER. In some cases I don't think we had enough, compared to the type of operations that are going on now, not from what I have read.

Mr. FULTON. Many of those training posts that you spoke of putting a new army in, after the Regular Army vacated, weren't even big enough to have a rifle range, were they?

General TYNER. As to those posts that did not have a rifle range, I would have to look on the plan to see what was contemplated.

Mr. FULTON. You know from your past experience that a number of these Regular Army posts weren't equipped with rifle ranges.

General TYNER. Oh, yes.

Mr. FULTON. And couldn't be.

General TYNER. Sure, and I don't know what troops we had in those posts. I would have to look in the plan to see.

Mr. FULTON. What kind of training did you expect the new army to get in that kind of post?

General TYNER. I didn't say that we would put them in that kind of post. I would have to look at the plan to see what we would put in that post that didn't have a rifle range.

Mr. FULTON. Now, going back to that question of topographical maps, of course you didn't have \$15,000,000, but you could at least look at a topographical survey to see whether it had good drainage in that kind of area, couldn't you?

General TYNER. All of those sites, I think, had a geological map. I am not sure. Two inches to the mile or 1 inch to the mile.

Mr. FULTON. Did you look at those maps?

General TYNER. The officers looked at those maps; yes. I can't say that I personally looked at each map, because I don't remember.

Mr. FULTON. Did you call those officers in and find out what kind of survey they were making in that kinds of territory? Did you ask them questions to ascertain whether they had——

General TYNER (interposing). That would be in the report that came from the corps area commander as to what the topographical features were of the camp where he set the division at a place that wasn't there at that time. Now, let me see——

Mr. FULTON. Those topographical reports that you speak of are conclusions, aren't they? They don't give the underlying data.

General TYNER. I can't answer that. I would have to get the report out and read it personally.

Mr. FULTON. Have you ever seen one that had the underlying data in it?

General TYNER. Personally, I was satisfied that the layout—that is, the place that they were going to locate these divisions—had been properly investigated.

Mr. FULTON. Now, before you became satisfied that they were properly investigated, what kind of an examination of what people did you make to make sure of that?

General TYNER. I had officers in my office that informed me of the fact, and in some of the cases I looked over them myself. I can't give you each one, because I don't remember.

Mr. FULTON. Did you ever take any single one of them and go out and make a thorough inspection yourself and ascertain whether they had given consideration to underlying data?

General TYNER. No. We sent some officers down in the case where Florida wanted to set up a new State camp for whatever it was—2,000 men or whatever it was. I sent an officer from my office down there before we agreed to the Florida site, which I think they now call Camp Blanding.

Mr. FULTON. Did you ever yourself check up to see what kind of underlying data they had collected on which they based their conclusions?

General TYNER. No——

Mr. FULTON. In any single instance?

General TYNER. I can't say that I went over the layout of the place where they didn't have a camp at that time. No; I don't think I did.

Mr. FULTON. Didn't you think that desirable?

General TYNER. I thought—I was satisfied with the report of the corps area commander, who was an officer of experience and who had a staff and who was charged with that duty and who did make plans, because I was in the corps area where we did make the plans.

Mr. FULTON. You were in charge of C. C. C. construction as Army advisor on that, were you not?

General TYNER. That is right.

Mr. FULTON. Did it ever occur to you that you might use the C. C. C. construction in order to make typical barracks and get experience as to how to build them fastest and cheapest?

General TYNER. It never occurred to me that Mr. Fechner would approve of his money being used for experimental Army purposes. In the first place, barracks first put up were a fixed type of board barracks. Then he required us to have the portable type of barrack,

where it came in sections and was bolted together. It was a very much more expensive method, but he required us to have it so that he could remove the camps when the company would finish a project and would go to another site, so that we just take the camp apart and put it on trucks or railroad and ship it over to the new site and then set it up and bolt it together. That type of building was not suitable for the Army.

Mr. FULTON. Did it ever occur to you to ask him whether he would permit the building of a few buildings that could be used for you to determine how to build the barracks?

General TYNER. No; that never occurred to me.

Mr. FULTON. Why did you think he wouldn't do that?

General TYNER. Well, I didn't think that he would concur in his appropriation being used for Army experimentation.

Mr. FULTON. At any rate, you didn't ask him the question.

General TYNER. I don't remember ever having asked him.

Mr. FULTON. And yet wouldn't that be quite valuable experience? you could tell—

General TYNER (interposing). There were many things that we could have obtained from the C. C. C. that were valuable.

Mr. FULTON. Why didn't you do it or at least ask him?

General TYNER. Well, the idea was that the Army was to administer the C. C. C. without—

Mr. FULTON (interposing). Without getting any experience in it?

General TYNER. Yes; the Army got experience. It got a great deal of experience in the operation of the C. C. C. They got a great deal of experience, very valuable experience, because all of the crops area staffs had a chance to practice mobilization. For instance, in the spring of 1933, commencing around April, we had a very valuable experience in assembling the C. C. C. and distributing them to camps. We got a great deal of experience. It was a great help to the Army.

QUESTION OF FIXED-FEE CONSTRUCTION CONTRACTS

Mr. FULTON. Did you give any consideration to the methods of letting contracts or working out construction contracts?

General TYNER. That is in the Quartermaster General's office.

Mr. FULTON. Did you ever discuss that matter with General Seaman?

General TYNER. No. General Seaman and I used to discuss policy, but as far as the administration of the contracts and all, that was run by General Seaman's office.

Mr. FULTON. Wouldn't the question as to whether you should use cost-plus-percentage contracts be a matter of policy?

General TYNER. Yes.

Mr. FULTON. Did you ever discuss that?

General TYNER. Yes; but not in connection with the C. C. C.

Mr. FULTON. No; in connection with Army construction.

General TYNER. Yes. Congress passed a bill in the winter of 1938-39 giving the Army the same right to have a fixed-fee contract as the Navy had, except that it was only to be in the foreign possessions, if I remember correctly, and I discussed with the Quartermaster General's

Office at great length the question as to whether there would be a fixed-fee contract for the new permanent construction we had in Panama. I was on a board that considered that matter.

Mr. FULTON. Just what did they do when they considered the matter?

General TYNER. They decided not to have the fixed-fee, and they let all the permanent construction in Panama on contract.

Mr. FULTON. What kind of an investigation did they make of the details of such contracts before they made their decision?

General TYNER. Well, this board that I was on worked on the matter for, oh, a couple of months, I guess.

Mr. FULTON. During those 2 months just what did they do?

General TYNER. Well, they studied the question of how it would operate—this fixed fee. There was a maximum percent that the contractor could receive, and then the idea was that we would study out as to how much of his plant and of his people he would use on that job, and how much of that would come in the fee, and then as to how much it would cost for him to make—he acted as a building agent for the Government under this plan, scheme, that they were talking about, which did not go into effect while I was there. But the question was as to—you put an Army officer in his office, and then you watched to see what purchases the contractor made which were paid for by the finance officer. In some cases he would pay for them and the finance officer, if I remember correctly, would reimburse him. And then we had this Army officer—the theory was that he was to be in his office to watch to see what this contractor purchased, what equipment he rented, what equipment he brought to the job that he owned himself, and all of the other means by which we would ascertain as to how much the job was going to cost.

Of course, the whole idea was that the Government took the risk and the contractor did not take the risk, and the contractor got a fee for his professional ability and for his organization that he had as a going concern.

Mr. FULTON. Was that just for one project, or were you considering that as a general question of construction?

General TYNER. The one that we were considering was the question of permanent buildings in Panama, and it was decided that they would not have the fixed fee, and so more than one contract was let.

Mr. FULTON. Did you ever give any consideration to the question of the policy of using fixed fees and the safeguards that would have to be inserted to protect the Government?

General TYNER. Oh, yes; we had one young officer that devoted much of his time to that, a young engineer officer in the Chief of Engineers' office, and he worked with us all this time that they were considering the question of Panama.

Mr. FULTON. And did he work on the general policy question of fixed-fee contracts and how to handle the individual divisions?

General TYNER. What we were working on then was as to whether the appropriation made for permanent construction in Panama was to be done by fixed fee or by straight contract, and after all of this investigation it was decided that it would be done by contract.

Mr. FULTON. Yes; but I meant the general question of how much consideration you gave to whether the Army would need fixed-fee con-

tracts in time of war and, if so, what provisions they should contain—what safeguards?

General TYNER. No; not this board that I was on. We were working only on Panama.

Mr. FULTON. And in any other connection outside of that board, you never gave any consideration to that?

General TYNER. We only were required to work up the question as to whether it would be done in Panama, and I don't know what was done after I left.

The CHAIRMAN. That is all, General.

General Baade, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

General BAADE. I do.

TESTIMONY OF BRIG. GEN. PAUL W. BAADE, UNITED STATES ARMY

The CHAIRMAN. Will you give the reporter your title and connections with the War Department, General, please?

General BAADE. Brig. Gen. Paul W. Baade, United States Army.

The CHAIRMAN. You were assistant to General Tyner, were you, General?

General BAADE. I was assistant to him and to the previous Assistant Chief of Staff, G-4, in the Construction Division, and as head of it for approximately 2 years.

The CHAIRMAN. What years were those?

General BAADE. I was in the Division from 1935 to the summer of 1939.

PLAN TO HOUSE MOBILIZED ARMY IN TENTS AND EXISTING FACILITIES

The CHAIRMAN. Did you find any plans contemplating a mobilization of an army in the United States, for the care of that army, in the Department while you were there?

General BAADE. There were several plans and they were studied and changed from time to time. The latest plan just before I left was the protective-mobilization plan, which covered an army of approximately a million men.

The CHAIRMAN. And how was it contemplated to house those men during the training period?

General BAADE. Largely in tents or in facilities that were available. The plan for that army was that it was to be used rather quickly, and that particular plan did not contemplate the additional mobilization. It was an immediate-readiness plan, and I recall very distinctly that we checked on available facilities, using National Guard armories for a short period, National Guard camps, and all available Regular Army facilities.

The CHAIRMAN. Did you contemplate the construction of any cantonments or tent camps?

General BAADE. In that particular plan, I think not.

The CHAIRMAN. Then no plans were made for the construction of these camps?

General BAADE. Not the particular type of camps as now built. We should really look at the planning for housing from three or four

different points of view; permanent housing for the Regular Army; the summer camps for the civilian cantonments, including the National Guard; cantonment construction; and land acquisition. The permanent housing, of course, doesn't enter into this.

The CHAIRMAN. In those permanent-housing posts, did you have any post in the United States that would hold as much as a division?

General BAADE. No; but we hoped to. It was the plan of the War Department to develop in each of the nine corps areas at least one area that would be large enough to house most, if not all, of the troops in the corps area, and to enable maneuvers thereof.

The CHAIRMAN. How many of those corps areas did you have those plans completed in?

General BAADE. That is difficult to answer because it was difficult to secure authorization from Congress for the purchase of the land and for the buildings.

The CHAIRMAN. Well, it wouldn't take much money to make a plan.

General BAADE. The plans were, I should say, quite well along—maybe not on paper, but, if I may add, they included Fort Devens in the First Corps Area; Fort Dix and Pine Camp in the Second and Fort Meade in the Third. In the Fourth we had about five camps; in the Fifth we had only Fort Knox; and in the Sixth, Camp Custer, which was very small and merely a summer training camp, only about 2,800 acres. In the Seventh we had nothing that I recall. Ft. Snelling was the largest post available in that area. I am merely trying to show how we tried to figure on what we would do, and I can remember many discussions about what we would have to do on mobilization, and that we would have to acquire additional land in the South where we could house large units. The Quartermaster General had plans for various types of cantonment buildings that would be erected. There were no plans for a definite and specific lay-out in any camp.

The CHAIRMAN. You had no definite plans for a specific lay-out in the case of mobilization in any one of these corps areas. They were all nebulous and in the air. You had them in contemplation, but you didn't have them on paper.

General BAADE. No.

The CHAIRMAN. It would have been a great help to this present situation if you had some of them on paper, I think, since you have a World War experience to which to look back. You built cantonment camps in that emergency, and it seems to me that if you were contemplating a mobilization of a million men, you could have used your World War experience to create some, at least a few, plans on paper, with which to go to work immediately.

General BAADE. We had all the building plans for the different types of buildings.

The CHAIRMAN. But you had no concrete plan even for Camp Meade over here. They changed that plan, I think, and threw it out the window, if they had one, because when we went to look at that situation over there we found that the contractor didn't know what he was going to do the day he went on the ground.

General BAADE. That is bound to happen whenever any plan is put into execution for the simple reason, in the first place, that the experience in this war has indicated a change in organization. I left the

War Department in the summer of 1934, when the square division was the only one we had. Shortly thereafter the divisions were changed to triangular. That has been studied for a long time. This, of course, would make a big change in the particular lay-out of your camp site.

The CHAIRMAN. It would only mean a few more or a few less barracks. That is all in the world it would mean—just a place to put a few more or a few less men. If you had a preliminary plan by which to operate and had had this thing laid out on a basis so you would know what you were going to do when you started, the size of the division wouldn't make any difference.

General BAADE. But you have to know the particular ground to put it on. Hilly ground or other ground causes variations, and we had no sites at that time that were large enough. We did have a land acquisition program.

The CHAIRMAN. You knew that you would have to have a place to put these men. If you mobilized 2,000,000 men, you knew very well you were going to have to have a place to put them and train them, because you couldn't send them to the front untrained. As I said awhile ago, in the World War we mobilized these men and trained them, and built the barracks to put them in, and it cost a lot of money, but it didn't cost one-third what it costs today. We thought then it was highway robbery. If you had some sort of plan as your experience in the World War dictated, I don't believe we would be in the mess that we are in now with these camps.

General BAADE. The War Department had plans for all the different types of buildings that were to be constructed.

LACK OF PRE-EMERGENCY PLANNING FOR CAMP CONSTRUCTION AND UTILITIES

Mr. FULTON. Where did you plan on putting buildings at Camp Meade? What kind of plan did you have for that?

General BAADE. That plan would depend on how many troops were to go in there.

Mr. FULTON. What kind of plan did you have for putting people in a specific place in Meade? Where were you going to put the utilities at Meade?

General BAADE. I doubt if they had a specific plan for that until the decision was finally made what was to be put there. That decision had not been reached when I left the War Department.

Mr. FULTON. In other words, there were no plans for laying out utilities at Meade.

General BAADE. I doubt it. I doubt if they had anything other than the type of buildings and a general idea of what type utilities would have to go in.

Mr. FULTON. What kind of idea was that? Would you tell us what the general idea was?

General BAADE. I cannot answer this positively. General Hartman and General Seaman are present and can answer that in more detail.

Mr. FULTON. I know; but I was thinking of policy. What kind of policy as to utilities did you lay down?

General BAADE. Water, bathing facilities, suitable wash fabrics, heat, and light.

Mr. FULTON. Take water, for example. What kind of study had you made at these camps as to quantities of water?

General BAADE. That was being made all the time by the Quartermaster General, and various directives, as I recall, were sent down that that be done.

I know specifically for Fort Dix that the water supply was a constant worry, and we finally did secure enough to supply up to 50,000 men. The same thing was true at Fort Benning. We tried to make like provision at all our larger camps. We did it within the funds that the War Department could secure, and we tried to build up those camps which appeared most important at the time.

Mr. FULTON. But I was wondering if you could tell us the kind of study you personally made of the check that was being made on water.

General BAADE. Just along the line I mentioned.

Mr. FULTON. That you sent directives to the Quartermaster to study the water. Is that it?

General BAADE. Study camp sites.

Mr. FULTON. What study did you make, I mean?

General BAADE. None further than the general study I have mentioned. The only definite final study we had was that protective mobilization plan. Prior to that plan the War Department had a general mobilization plan which envisioned many more troops, and that plan envisioned using hotels and other facilities in cities. That plan was changed, and a smaller plan, the protective-mobilization plan, drawn up and adopted about the time I left the War Department.

Mr. FULTON. But, General, I was merely trying to find out whether you, as Chief of Construction, personally got right down to the brass-tack issue of checking on the individual officers and seeing whether their plans for, say, obtaining water were plans that had been studied out carefully.

General BAADE. For those camps that we knew we were going to use; yes.

Mr. FULTON. Which camps were the ones that you yourself studied in that way?

General BAADE. Various ones in each corps area and some of the National Guard camps that had been approved, as well as the additional land we owned at Lee, Jackson, and, I think, at Shelby. I do not recall any others right now.

Mr. FULTON. And in those cases, you yourself made a personal investigation of the water?

General BAADE. No. It is impossible for one man to do all that. That is delegated to the people who have to construct them in the Quartermaster General's office.

Mr. FULTON. Did you do it in any case yourself?

General BAADE. I did in every case where there was a chance of our getting funds and which were on priority—Dix, Devens, Benning, and some of the newer camps for the Air Corps.

Mr. FULTON. Taking one of those cases, will you tell us exactly what you yourself did?

General BAADE. Well, let me quote two new air fields—one the new Northeast Air Base, and the other, Borinquen Field.

Mr. FULTON. Were these matters that you were working on?

General BAADE. I was working on them. A board was sent out to select the field. They picked four or five sites, and the one they recommended for the Northeast Air Base was one through which a United States highway ran. Recommendation was made to my chief and to the Chief of Staff, that before that site be selected, serious consideration be given to the difficulties involved, which meant the moving of a bridge and of the highway. The final site selected was Chicopee Falls, Mass.

Mr. FULTON. With respect to water, will you tell us what you did?

General BAADE. That appears in all the reports. We check to make sure that the water supply is ample.

Mr. FULTON. Let us know how you checked. Will you tell us how you did it?

General BAADE. The board reports indicate whether the water supply is sufficient, for how many men, and what the approximate cost will be. I do not remember the details. That is all included in the detailed study made, and that takes time. That board took 3 months, I think, before the report was made.

Mr. FULTON. But, General, I was just asking what check you personally made on any one water situation.

General BAADE. Well, if the board puts it down on paper, we have to take their word. They are sent out for the specific purpose of checking those points. This board consisted of members of the General Staff from War Plans, from G-1 and G-4. We had our representative on that.

Mr. FULTON. Then I take it the answer is that you took the reports?

General BAADE. You have to.

Mr. FULTON. And relied on the reports, but that you didn't check any of them as a test check to find out whether it had been a good report, well made up, or not?

General BAADE. Well, I am just mentioning certain things that I noted that apparently would cause difficulties. I invited attention to these, and as a result a different site was selected.

Mr. FULTON. Well, will you tell us any situation with respect to water, for example, where you made an underlying check?

General BAADE. I can't think of any particular case that came up other than possibly Ft. Dix. I discussed this case at various times with General Hartman, General Seaman, and the water people in the Quartermaster General's office who reported that the water situation at Ft. Dix needed amplification. This was borne out by reports that came in from the field. That water supply has been amplified.

Mr. FULTON. In other words, you confined yourself in all cases to relying on reports, and you didn't yourself make test checks of any of those reports.

General BAADE. What do you mean by test checks?

Mr. FULTON. I mean getting down in the field and asking exactly what he did, what information he got, where he got it, and how he reached his conclusion.

General BAADE. That was in the report.

Mr. FULTON. It isn't in most of the reports I have seen.

General BAADE. If I felt, on any paper that I handled, that the report was not complete, it was sent back for more information.

Mr. FULTON. If the report said the water supply was adequate, would you say it was complete?

General BAADE. No.

Mr. FULTON. Well, some of those reports say just that in so many words.

General BAADE. That was not considered sufficient. Unless it was made by a man whom I knew knew his business and was conversant with the situation.

Mr. FULTON. How would you know that if you didn't check yourself?

General BAADE. I learned the name of the individual who made the report by making inquiries, and at various times if that was not considered satisfactory we sent out specially qualified people to verify the information. I will give you an illustration that is along an entirely different line. This happened under General Tyner's regime. We received a report that a building at Carlisle was unsafe and not fit for use. We sent a special construction engineer up, and he phoned back—I think it was Saturday noon—that the building was not safe, and before closing on Saturday the building was closed to all use thereafter. This is a small illustration of what I think you have in mind.

Mr. FULTON. You mean, then, that where somebody called your attention to a deficiency, you investigated it?

General BAADE. Yes; but we also investigated on our own.

Mr. FULTON. That is what I was asking. Now, what type of investigation did you make on your own of these Army reports as to construction of facilities for training?

General BAADE. We had, as I say, a land-acquisition plan. We tried to acquire more land, and we had a rather comprehensive program for peacetime. I forget what the funds amounted to, whether it was \$2,000,000 or \$10,000,000, but it was a fairly large sum for that time. It was in the larger reservations where we knew we could train in case of an emergency and where we needed more land.

The CHAIRMAN. Why didn't you use some of that 2,000,000 to draw up specific plans for these camps at that time?

General BAADE. The money was appropriated specifically for land purchases and not for plans. May I add here a thought that just occurs to me. The New York W. P. A. authorities, General Somervell at that time, requested authority to draw up some plans of buildings for mobilization. At that time the Corps of Engineers were—and still are—responsible for housing in the theater of operations. The Quartermaster General is charged with plans for buildings in the zone of the interior. That particular request was approved, with the distinct understanding that it would not duplicate or interfere with plans that had already been drawn by and in the office of the Quartermaster General. They had practically complete sets of plans for all types of cantament buildings in case we needed them.

The CHAIRMAN. What I am getting at, General, as I remember it, when I came to the Senate in 1934 there was an appropriation of \$4,800,000,000 made to W. P. A., and several hundred million dollars of that appropriation were left in the hands of the President, to be used by the Army and Navy for various projects, and those projects

were not specifically set out in the appropriation. I know very well that if somebody had wanted to do it in the War Department he could have created a W. P. A. plan,¹ and there were hundreds of architects and hundreds of construction men idle at that time, and complete and definite plans could have been drawn up for this very situation if you had it in mind.

I don't think anybody ever thought that there would be a necessity for doing just what we are doing now, but it was the business of the War Department to anticipate that, particularly your section of the War Department.

General BAADE. Well, that is true, and I feel that it was done, as far as possible.

The CHAIRMAN. What became of it? They didn't use it when the time came to construct these camps. We never did have any plans in the War Department which we could use. When every contractor that I have talked to went to work on the camp, he didn't have any plans to go by.

General BAADE. I can't answer that, except for lay-outs. You should certainly have plans for buildings, because if there were not, the plans were available, I am positive, when I left the War Department, in the Quartermaster's office, because I have checked—General Hartman can answer that, because I checked with him when I was in the Construction Division.

The CHAIRMAN. I don't doubt but that you had plans, maybe, in there for one cantonment. You would have them left over from the last war and the C. C. C., but you didn't have any plans put together. You didn't have more than one place. You didn't have any outline as to what would go in the camp and how it would go—a very simple procedure if you had wanted to do it.

General BAADE. On the cantonment type I know the directives were sent to the Quartermaster to plan—

The CHAIRMAN (interposing). There might have been directives there, but there weren't any plans when it came time to construct the camps. That is what I am quarreling about.

General BAADE. There is one policy on camp lay-out and construction that I think might well be brought out. You cannot make a definite lay-out of any particular camp until you know the ground that the camp site is going on.

Mr. FULTON. You knew the ground at Camp Meade. It was only 20 miles from Washington.

General BAADE. But there was no specific instance to say what troops would go there. For instance, at the time I was in the War Department, there was nobody that would have even guessed that we would have had selective service in time of peace.

The CHAIRMAN. No; General, but it wouldn't make any difference whether you had selective service or whether you didn't, you knew what the size of a division is, whether it was a square division or round division or triangular division, it is only a matter of organizations and men. If you need three regiments of infantry and two regiments of artillery and a regiment of engineers in a division, or

¹ See infra, pp. 2033–2043, for discussion of Work Projects Administration funds available for use by Quartermaster General.

if you need two regiments of infantry and a regiment of artillery and a battalion of engineers, that is merely a matter of adding more barracks or fewer barracks, or making more streets or fewer streets, or more sewers or fewer sewers. That sort of plan, it seems to me, could have been arranged so that it would have been of practical use when the time came along to use it. It didn't make any difference whether you were going to mobilize by draft or by just calling out the National Guard. You said you had plans for a million men to be mobilized, but you didn't have any place to put them or any place to train them, even on paper.

General BAADE. Oh, yes.

The CHAIRMAN. I have never been able to find them yet.

General BAADE. I cannot answer the details, but the camp sites that I mentioned were included in those, and I am sure the Assistant Chief of Staff, G-3, had definite plans as to where each of these units went. For instance, I think the Twenty-sixth was due to go to Falmouth, and, that camp site was so laid out so that it could be increased as it was. That is based on plans that were in the War Department.

Mr. FULTON. What kind of lay-out plan did you have at Camp Meade?

General BAADE. I do not recall—

Mr. FULTON (interposing). Do you recall any?

General BAADE. That I saw that, except that I have a faint recollection the plan was to use what was at that time the golf course and to build up on either side of the golf course, moving back very similarly to where the old cantonment was during the World War.

The CHAIRMAN. There is no doubt that they didn't use the golf course, however. They put the hospital over on one side so as to save the golf course, as nearly as I can figure out.

General BAADE. Then they must have added more land, because the land at that time was very limited.

The CHAIRMAN. That is all, General.

General Seaman, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

General SEAMAN. So help me God.

TESTIMONY OF BRIG. GEN. A. OWEN SEAMAN, FORMER CHIEF, CONSTRUCTION DIVISION, QUARTERMASTER CORPS, WAR DEPARTMENT

The CHAIRMAN. Will you give your title and connection with the War Department for the reporter?

General SEAMAN. Brig. Gen. A. Owen Seaman, Chief of the Construction Service, Quartermaster General's office, from January 1937 until January 1940.

The CHAIRMAN. General, you heard the testimony of General Tyner and General Baade. I am trying to get for this record just what plans were in existence and what plans were in contemplation by the Construction and G-3 Divisions of the War Department, anticipating the mobilization of an Army such as we are mobilizing now. Any information you have on that, we will be glad to have.

General SEAMAN. Senator, the office I had at that time was charged with the preparation of plans for buildings. We had nothing to do with the selection of sites or with where the troops were going. Our office was distinctly charged with the preparation of plans and bills of estimates for the buildings that were to be used. We drew up plans—mobilization plans—for barracks, 63-man barracks, for mess houses, kitchens, for warehouses, for garages, and for camp hospitals and miscellaneous buildings necessary in a mobilization center.

We changed from the old type of cantonment that was in existence during the last war to a new type of two-story barracks, with the latrine and lavatory in each barrack, so that the men wouldn't have to go outside and would have their toilet facilities in the barracks. Those plans were adaptable, by the addition of a heating plant, for any part of the United States or the foreign possessions.

The CHAIRMAN. What became of those plans when it became necessary to build these camps?

General SEAMAN. Well, when I left the office in January of last year, January 1940, they were all complete and bound, and we had used them in Chanute Field, in Scott Field, and in quite a number of the other fields. They were all in use at that time and were under construction when I was retired.

The CHAIRMAN. Were there any plans in your Department for the putting of these cantonments together in some form or other, to house as much as a division?

General SEAMAN. No; because the type of building, Senator, could be used no matter how many troops were going to a certain station or a certain camp. For example, when Benning was so vastly increased the type of the building that was used at Benning could be very readily expanded according to the number of men that were going in there.

The CHAIRMAN. So that no real lay-out was made, anticipating a cantonment to hold as much as a division?

General SEAMAN. Not as far as I know, not up to the time I left the office.

Mr. FULTON. General Seaman, you said you came in as Chief of Construction of the Quartermaster Department in 1937.

General SEAMAN. Yes, sir.

Mr. FULTON. At that time did you have any plans for these typical barracks and mess halls?

General SEAMAN. No, sir; except the ones that were left over from the last war. That was all. They were being revised at that time.

Mr. FULTON. What did you do in 1937 about that matter?

General SEAMAN. We were working entirely on plans at that time for the permanent construction. We had not anticipated any temporary construction at any time. We had no appropriation even in sight.

Mr. FULTON. The answer, then, is you did nothing about that.

General SEAMAN. Not until we got, as I remember now, \$63,000 which I had asked for, and we got it from the W. P. A. in December 1938. That allowed us, then, to hire the additional architects and additional engineers, and at that time we started on the plans which were in the office when I left there in 1940.

Mr. FULTON. Then I take it there was nothing done until December 1938.

General SEAMAN. On temporary construction; no, sir. May I add this so as to make the record clear? At that time we had a very, very small force, and we could not get any additional appropriations, and we had to have all of our engineers, draftsmen, architects, and everybody work on the permanent buildings, which included the large post at Hickam Field, the buildings at the different increases throughout the United States, like Benning, Fort Lewis, Fort Snelling, Fort Sam Houston, and posts of that kind—all permanent construction.

Mr. FULTON. And had no time left over for temporary at all?

General SEAMAN. We didn't have a large enough force; no, sir. Our entire force was working day and night, getting out the plans for these others. We were also working on the plans for the permanent building at Panama.

Mr. FULTON. What do you mean by "day and night," General?

General SEAMAN. We worked up until 10 o'clock at night and worked on Sundays and sometimes much later.

Mr. FULTON. And was that a practice in the War Department at that time?

General SEAMAN. We did it for over a year, sir.

Mr. FULTON. And that was in connection with what jobs?

General SEAMAN. Permanent buildings, Hickam Field, a big hospital out at Fitzsimons at Denver, and a big hospital in San Antonio, and all these permanent buildings and numerous other types of permanent construction for which Congress had appropriated moneys.

Mr. FULTON. So that it was a case there where, by reason of this excessive work on the permanent buildings, you had no time even to think about temporary?

General SEAMAN. We had no time to do anything else.

Mr. FULTON. At least you didn't think that temporary construction—

General SEAMAN (interposing). We did not think about temporary construction until we got the additional money, as I stated awhile ago, I think \$63,000, but that is a matter of record, in December of '38.

Mr. FULTON. Who first brought up to your mind the idea of going into temporary construction, or were you the one who thought of it?

General SEAMAN. Well, I can't say that I will take credit for it, but I had been trying for a long time to get some additional help so that we could continue the revision of our old war plans.

Mr. FULTON. Would you tell us the nature of these attempts you made to get the additional help for the purpose of going into temporary construction?

General SEAMAN. Yes; I asked for additional money to hire additional employees.

Mr. FULTON. In 1937?

General SEAMAN. In 1937.

Mr. FULTON. For the purpose of going into temporary construction?

General SEAMAN. For the purpose of going into everything—temporary, permanent, and everything else—so that we could expedite our work.

Mr. FULTON. Does it so state on any request that it had to do with temporary construction?

General SEAMAN. No, sir; it does not, but that was contemplated in the additional money that we——

Mr. FULTON (interposing). But you didn't mention it in any report?

General SEAMAN. No, sir; I did not.

Mr. FULTON. Wouldn't it have been a good idea to mention it so that they could see that that was something that you had close to your heart?

General SEAMAN. I don't think that the War Department contemplated at any time that there would be an increase in the Army at that time.

Mr. FULTON. You did; did you?

General SEAMAN. I thought I could foresee some of the things that have happened.

Mr. FULTON. But you didn't see fit to state it in writing?

General SEAMAN. No, sir.

Mr. FULTON. And did you read the report of the Graham committee¹ with respect to the last World War's cantonment projects?

General SEAMAN. I have seen the report of the Graham committee.

Mr. FULTON. Did you study it?

General SEAMAN. Not recently. I did see it while I was in the office; yes, sir.

Mr. FULTON. Did you study it in 1937 and '38?

General SEAMAN. I studied it in 1938 and '39; yes, sir. We had it before us all the time.

Mr. FULTON. Did you prepare any suggested changes in your contracts and your method of procedure to take care of the defects and deficiencies that had been found as to World War camps?

General SEAMAN. No, sir; I thought that would come up when the time came to build any of them.

Mr. FULTON. Well, it did.

General SEAMAN. Yes, sir; it did.

Mr. FULTON. But the question was what preparation you made for it.

General SEAMAN. I did not make any, sir.

Mr. FULTON. Take a matter like equipment rental. Did you give that any thought?

General SEAMAN. That was something that we didn't start in until we started the Air Corps stations. We never had rented any equipment until we started Air Corps stations like at Chanute Field and Scott Field and out on the west coast, McCord Field at Fort Lewis, Wash.

Mr. FULTON. But it was perfectly obvious that if you built a lot of camps, you would need a lot of equipment.

General SEAMAN. Nobody ever contemplated a lot of camps being built. There was no idea that we would have an Army of the size we have now.

The CHAIRMAN. General, didn't you contemplate a mobilization of a million men in your mobilization plan?

General SEAMAN. We had a protective mobilization plan; yes.

The CHAIRMAN. Where were you going to put them if you did mobilize them?

General SEAMAN. That was something we had never been told.

¹House of Representatives Select Committee on War Expenditures, 66th Cong.

The CHAIRMAN. You had a mobilization plan, but that was something that didn't occur to you.

General SEAMAN. We had the plans ready to build the buildings if they told us where to put them. We had nothing to do with the selection of sites.

The CHAIRMAN. The selection of sites is beside the question. What I am getting at is that you should have had some sort of plan to show where you were going to put these fellows when they were mobilized. We would get the sites. We got the sites in the World War, and you had plans of mobilization places during the World War that you could have used.

General SEAMAN. Senator, that was not a function of my office. That was a function of G-3 or the General Staff, sir. I had nothing to do with that.

The CHAIRMAN. It looks to me as if you should have had a plan to put a division together. You had plans for buildings, mess halls, latrines, but you did not have them put together.

General SEAMAN. That was not a function of my office at all, sir.

The CHAIRMAN. Whose function is it? I would like to find the fellow that ought to be responsible. He is the fellow that ought to get a currying for this situation.

General SEAMAN. That was a function of the General Staff, not of the construction quartermaster.

The CHAIRMAN. Of G-3; was that General Tyner's job?

General SEAMAN. I don't know, sir; I couldn't say.

The CHAIRMAN. Well, whose job was it during the last 10 or 12 years previous to that time?

General SEAMAN. The only thing that I know was that it was not a function of the Quartermaster General's office or my branch of that office.

The CHAIRMAN. Well, I am going to keep on digging until I find the fellow who is responsible for this situation, because I labor under the impression that we had some concrete plans for mobilization, and concrete plans for mobilization of a million men contemplate a place to put them and a place to train them. Evidently you didn't have it.

CONTRACTS FOR EQUIPMENT RENTAL

Mr. FULTON. With respect to equipment rental, I take it you didn't consider the question of making a survey, a matter of writing 20 or 30 letters to these various renters of equipment, finding out the prices and bases on which they rented.

General SEAMAN. We did when we started this temporary construction at Chanute Field and Scott Field and Fort Lewis, and places of that kind, sir.

Mr. FULTON. I mean the question as to whether you made any determination of policy as to how you would go about renting 70 or 80 million dollars' worth of equipment.

General SEAMAN. All of our contracts were lump-sum contracts and competitive bidding, and the contractor bid on a certain job and he furnished all his own equipment. We had no use for equipment of any kind.

Mr. FULTON. So you gave no thought to it.

General SEAMAN. Gave no thought to it; no, sir.

Mr. FULTON. But you did read the report of the World War and you know it was cost-plus in there.

General SEAMAN. Yes.

Mr. FULTON. Did you give any thought to the fact that if you had another cost-plus job you would have to pay?

General SEAMAN. We never would have had any cost-plus jobs if I had my way about it. I don't believe in it. Too expensive.

Mr. FULTON. General Seaman, with the plans that you had, how could you avoid it? How could you give a lump-sum bid for the building of a camp when you didn't know where the buildings were to be or what the type of drainage or utilities were to be, or anything else?

General SEAMAN. We would have found out before the advertisements were put out. We would have been told where the buildings were to be put and made a survey and given contractors necessary information on which to bid.

Mr. FULTON. How long would it take to put out advertisements on about 30 of these big camps when you had no more plans than you had?

General SEAMAN. We had plenty of plans for the buildings.

Mr. FULTON. Is it your opinion you could let the contracts when you didn't know anything except the typical buildings and didn't know their lay-out?

General SEAMAN. Certainly not, but they would have had to give us the location of the point to which the troops were to be ordered, what the reservations were, where they were going to send them.

Mr. FULTON. And by "they" you mean whom?

General SEAMAN. The Staff would have had to tell us that. That wasn't a function of the Quartermaster General's office at all.

Mr. FULTON. I see; and you would have expected that unless the Staff could give you those complete lay-outs you wouldn't build any camps.

General SEAMAN. As far as we knew, there weren't any camps to be built.

Mr. FULTON. Did you ask General Tyner whether he had any such lay-outs?

General SEAMAN. No, sir; I did not.

Mr. FULTON. Did you even think that he had any such?

General SEAMAN. I didn't know anything about it, because no camps were contemplated at the time I left the office.

Mr. FULTON. Did you ask him?

General SEAMAN. No.

Mr. FULTON. Did you ever think about it yourself?

General SEAMAN. No, sir; I did not.

Mr. FULTON. And you still think you could have let lump-sum contracts?

General SEAMAN. I certainly do.

Mr. FULTON. In other words—

General SEAMAN (interposing). We had no trouble letting lump-sum contracts down in Panama, we had no trouble letting them out in Honolulu, and we had no trouble letting them in a lot of other places in the United States.

Mr. FULTON. It seems to me you said a few minutes ago you had to work 10 or 12 hours a day in order to do it on projects which, compared

with the size of these projects, amount to practically nothing. How do you expect you could let lump-sum contracts on these huge projects or anything approaching them in size within the time that the Army would need the camps?

General SEAMAN. Why, I don't know why you couldn't; I still fail to see why you couldn't do it.

Mr. FULTON. You have been head of the Construction Division of the Quartermaster Corps for 3 years, and you still don't understand that you have to have a lay-out plan?

General SEAMAN. Why, certainly.

Mr. FULTON. Before you can get a contractor to make an intelligent bid on a lump-sum basis?

General SEAMAN. Certainly you do.

Mr. FULTON. How long do you think it would take to make a lay-out plan for, say, Fort Leonard Wood or Camp Meade? Could you make a lay-out plan for Camp Meade? If they used the old Franklin Cantonment you had your lay-out plan already prepared. When they went over to some other part of the reservation it wouldn't have taken but a couple of weeks to make a lay-out plan.

The CHAIRMAN. General, do you really think that lay-out plans could have been made for these camps in time to let lump-sum contracts? I am interested in that. If that is the case I would like to have seen it done.

General SEAMAN. If we could have made it when the location was selected; after the location had been selected if we were told where that location was, told the number of troops that were going there, we could have made a survey of that place and gotten our lay-out plans after the survey was made. As to how long it would take to make that survey would depend upon the condition of the ground, the terrain.

The CHAIRMAN. Let me give you a specific example of how some of those things were done. At Fort Bragg they told the contractor that he was going to build a camp for 8,000 men. It was increased to 16,000; it was increased to 27,000, and I think finally wound up with 67,000.

General SEAMAN. Yes, sir.

The CHAIRMAN. And they are still building on it. The camp was supposed to cost \$9,000,000 to begin with; that is the estimate on it—\$3,000,000—I am corrected to start with—and it finally wound up by costing about \$43,000,000 and they are not through with it yet. How would you lay out plans for a camp like that?

General SEAMAN. The same way that we laid out our plans for the increase in the water supplies. We took for granted that at some time they would require, say, double, triple, or quadruple the number of men at a certain point. I have in mind right now the increase in the water supply at Fort Benning. We tried for 2 years to get the money for that and get it through the Appropriations Committee. It was only due to the fact that I was fortunate in getting down at Fort Benning personally with Congressman Snyder, who was chairman of the Appropriations, General Chaffee, and Mr. Pugh, and got them to look into it, that that year we got the money. We only were allowed to ask, under our directive from the War Department, for \$180,000.

One of the questions I was asked when we were before the committee was asked by Mr. Snyder after I had shown him the condition down

there. He said, "If we give it all to you now, how much can you do the work for so that you will have the thing completed once and for all?"

I told him that if he would give us \$450,000 we could do it. We did it, and they have all the water they need down there now. That is just one example, as I say; it is a hard proposition, too. We prepared plans for increasing the water supply at Huachuca, at the request of Senator Hayden, and Fort Snelling, and oh, I don't know, 15 or 20 places. We went into them and I sent engineers out and went to a good many of the places personally and looked into the water situation, came back and got the money, and got the water.

Mr. FULTON. Going back to cost-plus contracts, I take it, then, you didn't think that it was even worth considering the subject because you didn't expect that it would ever be necessary to use them.

General SEAMAN. I didn't think we would ever have these cantonments.

Mr. FULTON. And specifically you didn't consider it would ever be necessary to use any cost-plus contract.

General SEAMAN. I didn't think it would; no, sir, as I never believed in such procedure. Cost plus is not economical.

Mr. FULTON. So you gave no consideration to it.

General SEAMAN. No, sir.

Mr. FULTON. Now with respect to the lump-sum contract, did you work over that kind of contract for the purpose of specifying the provisions that should go into one in case we had an emergency construction program?

General SEAMAN. We had a standard contract form, sir, which has been amended to take into consideration any emergency contract.

Mr. FULTON. Just how did you amend that to take into consideration the question of equipment rental?

General SEAMAN. We didn't, because the lump-sum contract does not include equipment rental. The contractor furnishes his own equipment in a lump-sum contract. He bids on a contract that he will build this building or these buildings, or whatever it is, for so much money, and he has to furnish every bit of his own equipment. There is no—

Mr. FULTON (interposing). I understood that. But now you never gave any consideration to the fact, did you, that if you started out to build \$800,000,000 of construction, at that time when we were also engaged in a war effort, that there wouldn't be enough equipment to go around and contractors couldn't get it by the simple process of lump-sum bidding.

General SEAMAN. That came after I left, sir.

Mr. FULTON. I know it did, but the question was, did you give any consideration to the fact that it would have to come if we had an emergency period of construction?

General SEAMAN. I don't think myself or anybody else ever contemplated we would have the Army that we have now in peacetime and that we would need—

Mr. FULTON (interposing). Or that we would have a war.

General SEAMAN. Or that we would have a war; yes, if you want to put it that way.

Mr. FULTON. In other words, you operated on the assumption that we didn't need an Army because we wouldn't have a war.

General SEAMAN. I was operating in peacetime doing permanent construction and not temporary.

Mr. FULTON. Building officers' housing barracks, hollow tile barracks buildings on these 130 or 140 posts where there was building going on.

General SEAMAN. Building concrete and brick barracks and officers' and noncommissioned officers' quarters, warehouses, fire stations, theaters, chapels.

Mr. FULTON. And that was so important that no time could be given to the possibility of there being a war.

General SEAMAN. We didn't have enough force.

The CHAIRMAN. That is all, General.

Due to the fact that the Senate is likely to vote at any time on the draft bill, the extension of the draft, I am going to recess the committee until 10:30 on Tuesday, and ask General Hartman and General Baade to appear at that time again, please.

(Whereupon, at 12:05 p. m., an adjournment was taken until 10:30 a. m., Tuesday, August 12, 1941.)

INVESTIGATION OF THE NATIONAL DEFENSE PROGRAM

TUESDAY, AUGUST 12, 1941

UNITED STATES SENATE,
SPECIAL COMMITTEE TO INVESTIGATE THE
NATIONAL DEFENSE PROGRAM,
Washington, D. C.

The committee met at 10:41 a. m. pursuant to adjournment on Thursday, August 7, 1941, in room 318, Senate Office Building, Senator Harry S. Truman, of Missouri, presiding.

Present: Senator Harry S. Truman (chairman).

Also present: Hugh A. Fulton, chief counsel; Charles P. Clark, associate chief counsel.

The CHAIRMAN. The committee will come to order, please.
General Baade.

Mr. FULTON. Is General Baade here?

The CHAIRMAN. Take the chair, General. Mr. Fulton has some few questions he wants to ask you.

TESTIMONY OF BRIG. GEN. PAUL W. BAADE, UNITED STATES ARMY—Resumed

LACK OF PRE-EMERGENCY PLANNING FOR CAMP CONSTRUCTION

Mr. FULTON. General Baade, in your testimony¹ last week I think you stated that you were Chief of the Construction Branch of the War Department General Staff from 1935 to the summer of 1939. Is that correct?

General BAADE. That was not my intention. I was on duty there for those 4 years. I was Acting Chief for about 10 months and actual Chief for the last year, making approximately 2 years.

Mr. FULTON. As I understand it, the duties of the Chief of that Construction Branch would include the initiation of plans and specifications for construction, would they not?

General BAADE. That is correct, based on policies announced by other branches. We cannot very well make plans until we have been told by some of the other branches of the staff for how many troops and at what places housing will be required. That is a function of the planning branch of G-3.

Mr. FULTON. Well, it was also your duty to lay out plans for construction sites, wasn't it?

General BAADE. No. That would be a function of the Quartermaster General after he has been told where to build camps or cantonments.

¹ General Baade's previous testimony appears, *supra*, pp. 2007-2014.

Mr. FULTON. After he had been told by you where they were to be put, wouldn't it be?

General BAADE. That is right.

Mr. FULTON. So, you would have the duty of laying them out to the extent of indicating the general situation that he was to follow.

General BAADE. Well, that was done, as I understand it. I am sure that they had type plans, type lay-out plans, for regiments, brigades, and divisions. I am not positive of that. General Hartman is here, and he can give you specific answers on that particular point. I know they did have specific plans for each type of building that would be used.

Mr. FULTON. But, General Baade, I was trying to find out what plans you had initiated in accordance with the functions that you have just described that you had, namely, of initiating plans and specifications for construction and lay-out plans which the Quartermaster General would then follow more in detail.

General BAADE. It is impossible to issue specific instructions until you know at what place and for how many men you are going to provide housing. I stated the other day the plan about the time I left for mobilization, contemplated under the protective mobilization plan, visualized a mobile army of, roughly, a million men who were to be made ready for prompt use. I do not believe that the War Department at that time had any definite plans for the specific location, except in a general way, as I have already mentioned at special posts for larger units thereafter—they did have general plans, as I stated before, for the various types of buildings that could be quickly placed in those locations.¹

I also believe that at that time the corps area commanders were charged with making lay-out plans for the forces to be mobilized within their corps areas. I am not positive of that statement.

Mr. FULTON. As chief of the construction branch, did you check up on that?

General BAADE. Yes; as far as we could at the time, under the status of the mobilization plans.

Mr. FULTON. Now what prevented you from checking further than that?

General BAADE. Well, you can't ask for something until there is a general plan on which to base a request. The War Department had made definite provisions to house troops required under the Protective Mobilization Plan.

Mr. FULTON. Well, wasn't it your duty to initiate construction plans, and wouldn't it have been your duty to initiate these general plans that you speak about?

General BAADE. That was something that was always discussed only in a general manner and, as I stated before, you cannot issue detailed directions until you have some idea what decision has been made as to where troops are to be quartered.

Might I bring up here a point in connection with the particular construction at the present time, and the type of mobilization? It is

¹ General Baade subsequently informed the committee that: The Protective Mobilization Plan called primarily for tent camps. These were to be placed on lands already owned by the War Department, or the Government. A survey of all national parks and forest lands was made, but most of these areas were found to be not suitable.

something entirely different from what I think anybody ever visualized. In the first place, Regular Army units were moved out of their permanent posts into new permanent stations. I do not believe that anybody in the War Department ever visualized a mobilization plan other than on a temporary basis. Take the first division, or any of the other divisions, for instance. The first division was moved out of permanent stations into a camp which became their new permanent station. It is really more than mobilization.

Mr. FULTON. Did you ever visualize such a thing as simply rebuilding the barracks at a place like Camp Custer, along lines you had done in the World War?

General BAADE. Yes.

Mr. FULTON. What kind of plans did you make for that?

General BAADE. Specific plans for the buildings were prepared for file in the office of the Quartermaster General. It was not, however, contemplated at that time under the P. M. P. to construct a cantonment at Fort Custer.

Mr. FULTON. In other words, you made no plans for construction at Camp Custer at all? It didn't enter your mind that you might rebuild it?

General BAADE. Not lay-out plans.

Mr. FULTON. Or any plans?

General BAADE. Yes. There is another feature that ties in with this. In all concurrent training-camp construction the plans so drawn and the lay-out so made that it was hoped and contemplated to enlarge those camps when the time came for mobilization. For instance, mess halls and kitchens were built of a more or less semipermanent character, the same for latrines and for tent floors, so that the camp could be readily used as a tent camp, and the streets could be added to and enlarged.

That was the scheme of laying out all of our civilian training camps. the best example is Camp Edwards, which was later enlarged. That is the outstanding example, I think.

Mr. FULTON. Well, General Seaman testified last week that he had no lay-out plans, for two reasons: First, that your section and the General Staff had never asked him to make any plans for the lay-out of cantonments; and, second, that he did not think there would be any more wars.¹ Now, what is your comment on that? First, the statement that you had not asked him to make any plans for cantonment lay-outs. Is that true?

General BAADE. I think that must be a mistake.

Mr. FULTON. I mean, did you ask him to make any plans for camp lay-outs?

General BAADE. I am sure there was some directive that went out calling for lay-out plans, for a schematic lay-out plan.

Mr. FULTON. Do you remember giving attention to such a matter?

General BAADE. Yes, indeed, I know we studied it all the time. Specifically, I cannot answer that question, but I am pretty sure—General Hartman is here, who was the head of the branch for awhile, whom I worked with and who was in the Quartermaster's office, who can give specific answers as to whether they had them or not. I am sure they did.

¹ Supra, pp. 2015 and 2021.

Mr. FULTON. You heard General Seaman testify, did you not? Did you not hear him?

General BAADE. I did.

Mr. FULTON. Did you hear him say he had never given 5 minutes' thought to that?

General BAADE. I doubt that the general meant that just the way you interpret it.

Mr. FULTON. How would you interpret the thought that the general had?

The CHAIRMAN. I think the general meant just what he said, General. I talked to him after it was over, and I think he meant just exactly what he said. He didn't think there would be another war, and he didn't give this thing consideration at all.

Mr. FULTON. Was he correct in saying that you had not furnished him with any such plans?

General BAADE. What do you mean—I, personally?

Mr. FULTON. The General Staff, of which you were the head of the Construction Branch. Had you given General Seaman plans that he should have carried out in detail, or was he right in saying that the General Staff hadn't given him any such plans?

General BAADE. I am positive there were instructions issued to the Quartermaster General by the Adjutant General that plans for buildings and type lay-out plans would be——

Mr. FULTON (interposing). You mean typical buildings, like barracks and mess halls?

General BAADE. That was all that could be done.

Mr. FULTON. Why is it all that could be done?

General BAADE. Because we did not have the land and the locations for any particular camp. You cannot draw up a plan for a camp until you know where you are going to put it and who is going to be there, and that decision has to be first made by the General Staff as a whole. That is not a decision which could be made by the Construction Branch.

The CHAIRMAN. At Benning and Fort Sill——

Mr. FULTON (interposing). At Camp Custer and Fort Meade.

The CHAIRMAN. At Camp Custer and Fort Meade, and you also had Fort Sam Houston, Tex., all of which were used in the World War, all of which had been locations of cantonments at that time. Why couldn't you draw plans that could be used at those camps in the future?

General BAADE. They had, I am sure, schematic plans that would have fit Benning very easily.

The CHAIRMAN. What about Fort Sill?

General BAADE. The War Department built a very large R. O. T. C.—or rather civilian component camp then. I think something like \$500,000 was appropriated for a tent camp.

The CHAIRMAN. If you had plans for cantonments or tent camps at any of those places, would not those same plans have substantially fitted any other area just as well as they would have fitted those areas, with just the necessary changes to meet the ground?

General BAADE. That was what I intended to convey in my testimony.

The CHAIRMAN. But you didn't have those plans; at least they didn't use them if they had them.

General BAADE. That I can't answer, sir.

Mr. FULTON. Have you looked for those plans, General?

General BAADE. No, I haven't; but I know they had them for tent camps.

Mr. FULTON. Do you know of any plan for Camp Custer, for example?

General BAADE. On the tent camp, yes—

Mr. FULTON (interposing). For barracks?

General BAADE. No; other than the general—

Mr. FULTON (interposing). As I understood you, you disclaimed, as head of the Construction Branch, any responsibility for initiating these general plans; that is, the general plans such as envisaging the possibility that we might be doing what we did in 1917. Is that true?

General BAADE. That phase was discussed many times with the head of the section and with the G-3 mobilization section. At the time I left the War Department the Protective Mobilization Plan was stressed, and all efforts were bent to perfect that plan.

Mr. FULTON. You mean, by "all," that they were giving no attention to anything other than that?

General BAADE. Not at that time. There was a complete shift in thought from the old scheme of using hotels and other facilities within the cities. Instead it was decided to concentrate troops in tent camps at first. As an illustration, one building, that was to be taken over was a huge warehouse that Marshall Field had built in Chicago, which would have housed many people, but which would have upset considerably the civil facilities, and it was decided to make a change and get a place that could cover the mobilization of a larger force. The plans for that would have to develop as land was acquired. That phase of the construction had not been reached by the War Department when I left.

Mr. FULTON. Then, as I understand you, you considered, as head of the Construction Division of the General Staff, that until and unless the General Staff made a conclusion to follow something other than the mobilization plan, you need give no attention to the other possibilities.

General BAADE. No more than the general plans that had been drawn up, types of buildings, and a schematic layout plan.

Mr. FULTON. Did you even institute those, General, or were they instituted by others?

General BAADE. The drawing of the plans is a function of the Quartermaster General's office and I know they were being prepared as I discussed them with the representative of his office.

Mr. FULTON. I am not asking if they were drawn. I am not questioning that. I am asking, did you institute them?

General BAADE. The preparation of the plans was started before I reported for duty. General Hartman and I discussed this subject frequently.

Mr. FULTON. Which of the two, you or General Hartman?

General BAADE. Both of us. He was in charge for a while, and I was in charge, and then he was down in the Quartermaster's office.

Mr. FULTON. But as far as any layout plans are concerned, you know that General Seaman was right in saying he wasn't giving any directive to prepare those. Is that right?

General BAADE. No; I don't say that.

Mr. FULTON. Was he wrong, then?

General BAADE. I would have to check the records very carefully to make sure.

Mr. FULTON. Don't you know whether you gave him directions to prepare layout plans for camps? That is a pretty important subject.

General BAADE. Whether I specifically did or whether another man in the branch did who was there before me I can't say. I know that the question did come up and that instructions of some nature were issued.

The CHAIRMAN. You know you didn't issue them, don't you, General? You would remember it if you did.

General BAADE. No; I won't say that, because I discussed it often. As I mentioned before, when the question came up about the engineers' drawing up plans, they were given authority to do so only with the understanding that it did not interfere with or duplicate the plans that were being prepared by or already in the hands of the Quartermaster General.

Mr. FULTON. Well, General, would you do this for the committee? Would you find any directive that you, as Chief of the Construction Division of the General Staff, wrote to General Seaman or the Quartermaster General directing that the Quartermaster General prepare layout plans for cantonments, or that he revise the Quartermaster's plans and specifications for buildings, or that he make any analysis of how much lumber and how many tons of nails or how many feet of pipe or how many stoves it would take to construct a cantonment? Do you think you can find anything of that kind in the record?

General BAADE. I can answer that right now. When I first came in the Construction Division there had been sent out a directive, and compilations were made in collaboration with the Assistant Secretary of War's office of a list of materials that would be needed. That compilation is available.

Mr. FULTON. What happened to it? Why didn't we know how many board feet it took from the standpoint of a bill of materials to make up one of these buildings when we started our camp program?

General BAADE. I am sure they had that.

Mr. FULTON. Will you find it and show it to us?

General BAADE. That should be in the office of the Quartermaster General.

Mr. FULTON. I am sure they will give you full facilities to look over the files, and wouldn't it be in your files if you sent them such a directive?

General BAADE. I know that is in the files. The compilation I refer to was primarily to determine the total amount of material required throughout the United States. It would not apply to the revised P. M. P.

Mr. FULTON. Would you show it to the committee?

General BAADE. I am sure I can find that.

Mr. FULTON. I think you stated the other day that plans were well along for Devens and Meade and Pine Camp and Dix, but we have been

told previously that no plans whatever were on hand for the lay-out of any of these camps.

General BAADE. I don't think you will find, in reading my testimony, that I mentioned detailed lay-out plans for any camp. I have always said that detailed plans for any camp were not made because we did not know what land we would have. There were no detailed lay-out plans for any specific camp of the cantonment type.

Mr. FULTON. With reference to General Seaman's statement that he wasn't expecting any more wars, were you expecting any?

General BAADE. Well, knowing human nature, I certainly would expect them, yes.

Mr. FULTON. Did you think it was desirable to have these lay-out plans in case we had a war and in case we needed them?

General BAADE. In a general way, yes, but there is no need making a specific plan until you know the specific purpose it is to be used for. You cannot make a specific plan——

Mr. FULTON (interposing). The specific purpose might be to house troops.

General BAADE. That is true.

Mr. FULTON. Such as we did in the last war. Didn't you contemplate that as a possibility, however remote?

General BAADE. That is true, and we had our type plans, but you cannot make a type plan for a square division and adapt it to a triangular division. You can do it very easily by cutting it down, but that does not give you the lay-out on the ground until you know exactly where you are going to place them. Take Fort Devens, for instance, and take any other camp; I think any plan that would have been prepared would have been changed and those that were prepared were changed; they had to be modified.

Another thing that has to be considered from the Quartermaster General's point of view is that he had many other functions to perform at the same time, and the amount of funds available for preparing these more or less nebulous plans would have to be put into the background until the other more pressing plans were covered.

Mr. FULTON. With reference to the square division that you refer to, isn't it true that the National Guard divisions are still square divisions?

General BAADE. Yes, sir; but at different strength from what they were formerly.

Mr. FULTON. I see; so you couldn't plan because you didn't know the exact number of men in a division; you couldn't even determine where you would put your sewer system because you didn't know how many men there would be in the square division. Is that true, General?

General BAADE. No, sir.

Mr. FULTON. Of course, it isn't true. You could have planned your utilities, your roads, your barracks, and your camp for a square division.

General BAADE. Provided you knew where they were going to be placed. For instance, may I mention this. In discussion, the War Department has to be ready to do things quickly, yes; but if they do

these things, are they going to be forced to put the troops in the Northeast, the Northwest, the Southeast, or the Southwest?

Mr. FULTON. Well, General, one of the points where you planned to mobilize in case of an emergency was Camp San Luis Obispo in California. Isn't that right?

General BAADE. I think that site was one included in the P. M. P. set-up.

Mr. FULTON. But it was one of the points where you planned to mobilize.

General BAADE. Final decision had not been reached, to my knowledge, when I left.

Mr. FULTON. You knew it was a plan, that it was planned for mobilization, but you had no plans for construction there. Isn't that true?

General BAADE. Not when I left the office.

Mr. FULTON. But that is a place where you did know that it would be in the West.

General BAADE. Not at the time I left the office.

Mr. FULTON. Did you ever go over the proposed contracts of the Quartermaster General regarding equipment to be rented?

General BAADE. No.

Mr. FULTON. Did you ever go over the proposed construction contracts with contractors, or were there such?

General BAADE. No; there was no reason for the staff's going over those that I know of. That is something that comes under the Assistant Secretary of War.

Mr. FULTON. Did you ever give any consideration to the question of fixed-fee or cost-plus or straight bid contracts?

General BAADE. Yes; we asked Congress to pass that law for a specific purpose, for construction in Panama in order to save time.

Mr. FULTON. But outside of Panama, did you give any consideration to the general question?

General BAADE. Not at that time. It was thought, among a number of us, that it would be a necessity due to the fact that you would not be able always to give these contractors specific and detailed plans, and that waiting for bids on plans would delay the work very much.

Mr. FULTON. Then you did realize that it was pretty important to have some specific plans if you wanted to have a chance to get straight lump-sum bidding instead of being forced to use the cost-plus contract? I mean you did realize that at that time if you didn't have plans you would have to go into cost plus.

General BAADE. Yes; but when you have to do things in a hurry you can't always have plans ready.

Mr. FULTON. You had 4 years.

General BAADE. Oh, well, even then you cannot plan specifically for a nebulous thing.

Mr. FULTON. I see.

General BAADE. Nobody can do that.

The CHAIRMAN. Couldn't you plan for the mobilization of a million men?

General BAADE. Yes, sir; the War Department had the P. M. P. which provided for a million men.

The CHAIRMAN. But you didn't have any place to put them.

General BAADE. Yes, sir; in tent camps. We had sufficient facilities to house a million men.

Mr. FULTON. Now, you stated in your testimony, and I believe General Seaman also stated, that water conditions had been gone into at a number of posts, but I think you were referring only to permanent Army posts. Can you tell us any place where you checked the water supply on proposed cantonment sites?

General BAADE. Not a detailed check, no.

Mr. FULTON. What do you mean by "not a detailed check"?

General BAADE. We had facilities, for instance, at Camp Lee and Camp Jackson, and I think Camp Shelby, and some of those other camps, where we knew the water facilities were sufficient for a certain number of men, or we know what additional water had to be put in. That was on file in the Quartermaster General's office.

Mr. FULTON. Did you check it?

General BAADE. I did not.

Mr. FULTON. You did not check at all?

General BAADE. No. There was no occasion to make a check at that time, from the data available in the War Department.

Mr. FULTON. It might have saved a considerable sum of money if we had known that that Iowa site for which there was an appropriation didn't have sufficient water.

General BAADE. That question came up afterward. There was no money appropriated when I left the War Department for the purchase of that site.

Mr. FULTON. But you had approved that site, had you not, as one for construction?

General BAADE. No.

Mr. FULTON. Had you disapproved it?

General BAADE. That site had never been discussed, as I remember. There was a site to be selected in the Seventh Corps area.

Mr. FULTON. Where did you favor putting it?

General BAADE. That question had not been reached when I left the office.

Mr. FULTON. You mean you had never given it any consideration?

General BAADE. Well, no, you couldn't, because the money wasn't available, and I think as the bill read, it was for a site in the Seventh Corps Area. The selection of the site was to be made later. I do not know the details concerning that. The selection was made after I left the office.

Mr. FULTON. Well, General, can you give us a single instance where you personally visited a proposed cantonment site and checked plans for it?

General BAADE. Yes.

Mr. FULTON. What one was that?

General BAADE. Camp Custer for one, a concurrent training camp site.

Mr. FULTON. When did you visit it?

General BAADE. That was about 1937.

Mr. FULTON. What did you do?

General BAADE. Checked the lay-out plans and the water facilities for what was to be constructed at that time, which was a comparatively small camp, but it was the beginning of the lay-out for con-

current training camps which would later be available for mobilization use.

Mr. FULTON. Did you check it from the standpoint not of what was to be constructed there, but of what might be constructed there? Did you give any consideration to the question of its usefulness or possible usefulness as a big camp?

General BAADE. Yes; to this extent: that the site was far too small at that time for any major construction, that the camp possibly would have to be enlarged, and that that particular place appeared to be the best for that corps area. With that in view, additional lands for that place were sought, and the War Department followed up and tried to secure enlargement of Camp Custer. That is but one of several stations for which the War Department sought additional land for use during mobilization.

Mr. FULTON. If you were going to seek additional land, wouldn't it be desirable to make a lay-out plan for the camp?

General BAADE. Yes. If you knew what additional land would eventually be purchased.

Mr. FULTON. Did you?

General BAADE. Not at that time; no, sir.

The CHAIRMAN. That is all, General.

General Tyner.

TESTIMONY OF BRIG. GEN. GEORGE TYNER, RETIRED, UNITED STATES ARMY—Resumed

Mr. FULTON. General, I think you testified last week¹ that one of the reasons that you were not able to go into this detailed planning and to select camp sites, and so on, was a lack of funds, and the fact that you didn't think that you would obtain funds from the Congress, or otherwise, for that purpose. Is that correct?

General TYNER. Well, in the first place, the plan that was in effect, the 1938 plan, which is the one that I was connected with, did not contemplate anything other than those tent camps, which I explained were in the mobilization plan. That was for National Guard divisions, and for the Regular Army to be mobilized at its home station, and in some cases the Regular Army, some unit, might have moved, but in the general scheme of things the National Guard divisions were assembled and the Regular Army divisions were assembled—the active units—and from there they went to the theater of operations. There was no plan, that I remember, at that time for any of these permanent cantonments or for any standing Army in time of peace.

Mr. FULTON. I so understood, General, but my point was, the reason that you didn't have any plans for any other action was the lack of money, or just the fact that you didn't think it necessary to bother with it? I thought you said last time that there was a lack of money for such purposes.

General TYNER. You asked me as to why we had not made reconnaissances for the alternative plan which you were discussing, of having the troops in barracks, and I said one reason was that we didn't have money.² You asked me if we had ever asked for money, but we

¹ General Tyner's previous testimony appears, *supra*, pp. 1993–2007.

² In this connection see also supplemental data, appendix, pp. 2308–2312.

did not have any plan of that kind that I remember at that time, so the point of not asking for money is not apropos, for the reason that there wasn't any such plan at the time.

Mr. FULTON. Isn't it a fact, General, that you did have the money?

General TYNER. I can't answer that because I would have to look it up. I don't know.

WORK PROJECTS ADMINISTRATION FUNDS AVAILABLE FOR USE BY QUARTERMASTER GENERAL¹

Mr. FULTON. General, I have asked the War Department to furnish us with information with respect to W. P. A. funds that were available, and I find that back on March 20, 1939, there was prepared for the War Department a statement showing that there was, in addition, available for use by the Quartermaster General, on application to the W. P. A., more than two and a half million dollars which could have been used for administrative expenses, such as hiring architects, draftsmen, statisticians, clerks, and so forth, and that those funds were not used.² Now, is that true, General, and do you remember that you didn't think it necessary to use such funds, or do you have no recollection of that?

General TYNER. I am sorry; I just don't remember the fact of that amount. I understand what you have just said very clearly.

(The documents referred to were marked "Exhibit No. 96" and are included in the appendix on p. 2255.)

Mr. FULTON. I show you a paper from the War Department files and ask you particularly to look at it and tell us whether you ever saw it before.

General TYNER. I can't say, but it was written at the time that I was in G-4.

Mr. FULTON. And it says right on it that two and a half million dollars of funds were available for architecture, and so on, which were not used, does it not?

General TYNER. You show me, and it will save a lot of time.

Mr. FULTON. It is No. 10.

General TYNER. Well, there is no question but that this says—understand, this—that it was not used.

Mr. FULTON. So that the fact that you didn't have these plans was not due to any lack of money but it was due just to the fact that you didn't think they were necessary or desirable. Is that correct?

General TYNER. Well, I won't answer that they were not desirable, but I will say that I do not remember any plan that we had to build permanent cantonments such as we have at the present time; I don't remember any such plan as that at all.

Mr. FULTON. There was no such plan?

General TYNER. There wasn't that I know of.

Mr. FULTON. But there could have been if you had taken the money that was available from W. P. A. for the purpose of making plans.

General TYNER. If the War Department had decided that there would be an alternative plan, from the figures you have here this money could have been used for that purpose.

¹ In this connection see also transcript of conversation between Hugh Fulton and Col. Arthur R. Wilson, held subsequent to this hearing and included in the appendix on p. 2308 et seq.

² Footnote 9 of compilation of funds allocated to War Department by W. P. A., included in Exhibit No. 96, appendix p. 2255 at p. 2264.

The CHAIRMAN. General, couldn't G-4 or the Quartermaster General either one have initiated a movement to create plans for a proposed mobilization of a million men?

General TYNER. Well, Mr. Chairman, we had that, sir, in tents but not in barracks.

The CHAIRMAN. But we didn't use it.

General TYNER. I am sorry, I can't answer that. I left in January 1940. You see, the plan we had, Mr. Chairman, was for a tent camp. Now, the fact that this money was not used—I am sorry, I can't answer that.

The CHAIRMAN. General, I have been looking at tent camps and cantonments and all sorts of camps that are being constructed nowadays until I am dizzy, and I have yet to find a single place where there was a plan for use in the construction of that camp, and I can't understand why it would not have been easy, under the circumstances, with all that money available and with all the architects and engineers that were begging for jobs at that time, at least just to keep those fellows busy it would have been a good time to play with that and work out some plans for use now.

General TYNER. Mr. Chairman, have you seen some camps that were of the plan of 1938 and that are now in use and for which there was no planned lay-out made?

The CHAIRMAN. I have seen Camp Meade.

General TYNER. That wasn't in 1938.

The CHAIRMAN. I have been very thoroughly instructed on Camp Meade.

General TYNER. That wasn't in 1938.

The CHAIRMAN. The National Guard camp at Blanding, Fla.

General TYNER. That was not in 1938.

The CHAIRMAN. I have seen Camp Bragg, N. C.

General TYNER. I would have to look up that.

The CHAIRMAN. I have seen Fort Sill, and I have seen Fort Riley, and I have seen Camp Benning.

General TYNER. Yes, sir.

The CHAIRMAN. And I have been at Fort Sam Houston, Tex., and I have been at Fort Bliss. Now, if there are any others you want, I think I can name a dozen more if you want them, and I have yet to find a single place where there was a plan available that was used in this construction program, and I say that advisedly, for I have been looking for them.

General TYNER. Yes, sir. Well, I can't answer that.

Mr. FULTON. General, it wasn't lack of funds that was holding you down, was it, because there is two and a half million you didn't want to use?

General TYNER. According to this there were sufficient funds. There is no doubt about that.

Mr. FULTON. Don't you remember that you took the position that you couldn't even use funds advantageously?¹

General TYNER. Well, now, I took that position, but I can't explain it very well because I don't remember very well about it. I remember that Colonel Wilson was in favor of our using some money

¹ See Exhibit No. 96, appendix, p. 2255 at p. 2256.

and that I was not in favor of it. But, as to why, I can't answer now because I don't remember. Does that answer your question?

Mr. FULTON. I think I have here papers from the War Department files which confirm the position that you have just stated, that you thought you had more money than you could use. It says here, "Brief of Colonel Robertson," your executive, that he didn't think you could use the money,¹ and letter of May 4 signed by you states, "Colonel Robertson, my executive's, brief herein expresses my ideas exactly."²

I assume you read that brief before you wrote that letter.

General TYNER. I think so.

Mr. FULTON. Paragraph 5³ says that "G-4," of which you were the head, I believe—

General TYNER. That is right.

Mr. FULTON (reading from Exhibit No. 96):

has felt for some time that too much relief money is being allotted and that all the labor for which money is allotted is not being or cannot be employed on Army posts. These views are borne out by comments of the Q. M. G.—

Which is Quartermaster General?

General TYNER. That is right.

Mr. FULTON (continuing to read):

The Quartermaster General states that it is his considered opinion that little or no additional Work Projects Administration money can be advantageously used between now and June 30, and that further relief labor cannot be logically or economically employed at most of the posts. Suitable action to rectify present conditions is recommended.

Now, can you tell us why you didn't think there was any planning at all or any work at all that you could do that might help the Army in any conceivable way with money that was made available to you through the W. P. A.?

General TYNER. Well, you have brought up the point that the money was available for the purpose of drawing plans for and lay-outs for cantonments.

Mr. FULTON. So stated to you at the time, in 1939.

General TYNER. And I answered that by saying that we didn't contemplate any such cantonments at that time.

Mr. FULTON. Did you contemplate a war?

General TYNER. We did, and we had plans for it, and the plans were written up, called mobilization plans.

Mr. FULTON. The plans were for particular type and character, and only one type and character was within the realm of your conception. Is that correct?

General TYNER. We contemplated that the troops would be used for active service.

Mr. FULTON. And it never occurred to you that it might be a war in the theater of operations where we might have for some time to depend on the Navy and not have a theater of action battles. Did that ever occur to you?

¹ Exhibit No. 96, appendix, p. 2255, at p. 2256.

² Ibid., at p. 2258.

³ Ibid., at p. 2256.

General TYNER. Oh, yes; we considered that we would have a theater of operations where the Navy would be the first line of defense, that is, out to sea.

Mr. FULTON. In the war of 1917, of course it was possible to land troops in France because the French Army was between the German Army and the landing point. Did you ever conceive that you might be fighting a country, Japan, for example, where you would have to land troops in the face of an enemy and where you might for some little time engage in naval operations before trying to land an army? Did you ever conceive of that?

General TYNER. Well, Mr. Chairman, we are getting into the question of specific war plans which I would like permission to discuss in closed session.

The CHAIRMAN. Well, General, we are not discussing any specific war plans. The thing that we are particularly interested in is a plan to house troops for training while we are getting ready to go into specific ones.

General TYNER. I tried to answer Mr. Fulton; we did not have a plan.

Mr. FULTON. There were possible war points that you could conceive of, where it wouldn't be possible to land an army for a time, without asking you to be specific.

General TYNER. What have you in mind? That the troops would be housed in buildings instead of canvas?

Mr. FULTON. I have in mind that it might not be possible to put the Regular Army on a battlefield right off the bat at the beginning of an emergency. There are several possible points in the world where you couldn't land such troops in a hurry, and I just wondered if you conceived of any of those.

General TYNER. We had concentration points for certain plans, and you will find those in the War Department.

Mr. FULTON. What I had in mind is, What are you going to do with the Regular Army when you can't land them somewhere for a time? What plan did you have to take care of them?

General TYNER. We were going to put them in tents.

Mr. FULTON. And where?

General TYNER. A position in readiness, we will say, for the sake of discussion, and in the position of readiness they would be in what we call pyramidal tents; that is, semipermanent camp.

Mr. FULTON. That would be a semipermanent camp. Where were those camps?

General TYNER. I don't know. We would have to look up the war plans to find out.

Mr. FULTON. Can't you remember, if you had such plans, a couple of places where you were going to have them?

General TYNER. No. If I could, I would ask permission not to discuss them here.

Mr. FULTON. Did you have any detailed lay-out plans for those semipermanent camp points?

General TYNER. No.

Mr. FULTON. Did you have any plans for utilities for them?

General TYNER. No, no. Wherever the troops were to be stationed there was water available.

The CHAIRMAN. That is all, General.

General HARTMAN. General do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

General HARTMAN. I do.

**TESTIMONY OF CHARLES D. HARTMAN, BRIGADIER GENERAL,
QUARTERMASTER CORPS, UNITED STATES ARMY**

The CHAIRMAN. General, will you give your name, rank, and connections for the reporter, please?

General HARTMAN. Charles D. Hartman, Brigadier General, Quartermaster Corps.

LACK OF PRE-EMERGENCY PLANNING FOR CAMP CONSTRUCTION

Mr. FULTON. General Hartman, I understand that you succeeded General Seaman as Construction Chief of the Quartermaster Department. Is that correct?

General HARTMAN. I succeeded him in March, when he went on his retirement leave, March of 1940.

Mr. FULTON. And when you succeeded him, did you find that there had been any lay-out plans that had been prepared for these camps so that it would have been possible for you to proceed to let contracts on bid?

General HARTMAN. There were no detailed lay-out plans for sites, schematic plans only.

Mr. FULTON. And before that time, you had held some positions with the Staff and, I think, with the Construction Division of the Quartermaster Corps. Would you briefly state those in their chronological order?

General HARTMAN. I was graduated from military academy in 1908; assigned to the Infantry; after service in the Philippines for 3 years, returned to this country in 1912 and served on the Mexican border in 1915, at which time I had charge of the preparation of camp sites for five regiments, plus a hundred-bed hospital.

When war was declared in 1917, I was detailed to the Quartermaster General's office and assigned to the then Cantonment Division, which was afterward changed to the Construction Division. This operated directly under the Chief of Staff at that time. In that Division, I had charge of the operation and maintenance of all the camps.

When the war was over in 1919, I was relieved from that work, sent overseas, and in 1920 returned as the constructing quartermaster for Washington and vicinity. I stayed with that office for about 6 or 7 months. At the end of that time I was detailed as Assistant Director of Sales and afterward as Director of Sales in 1923-24. When the office was closed, I moved out to a field job, because I had been in Washington over the statutory limit of 4 years. I had very little connection with the actual Construction Division subsequent to that, other than the operation of utilities and maintenance of posts.

I was at Fort Myer for 2 years, and I was stationed at Harvard 3 years, back to West Point for 5, where I had picked up con-

struction again, at which time I had some \$3,000,000 worth of construction work and maintenance on the post of West Point.

Upon my relief from that duty, I was detailed back to the Quartermaster General's office as an executive officer for the Chief of the Construction Division, in 1934. General Guiney was then in command of the Division. I stayed with that until July of 1935, when I was detailed to the General Staff and placed in charge of the Construction Division. I stayed on the Staff until my statutory limit was up, less a few months, at which time I was detailed back to the Quartermaster General's office, under General Seaman.

Mr. FULTON. What was the approximate date of that, General?

General HARTMAN. June 21, 1938. I stayed with the division until my 5 years were up in Washington, in July of 1939, when I was detailed to the Pacific coast and was brought back here in March of 1940.

Mr. FULTON. I believe you were executive assistant to General Seaman during that period from June 38 to July 39?

General HARTMAN. June 21, 1938, to July 1, 1939.

Mr. FULTON. And then when you were brought back in the spring of 1940, you came back as Chief of the Construction Division.

General HARTMAN. Acting Chief, because General Seaman had not retired. He did not retire until the 1st of August, at which time I was appointed brigadier general and placed in charge of the Division.

Mr. FULTON. I see. Well, General, during the World War, of course, you did have experience in construction. Did you follow the consideration that was given to the construction of camps and to possible economies that might have been accomplished therein by congressional committees and by various Army officers at the end of the war?

General HARTMAN. Yes, sir. I went over every record in connection with the World War at that time—everything concerning construction—and had prepared a study based upon the experiences of the World War as to what we would have to do in the event of another emergency.

Mr. FULTON. So that you did prepare a study so as to get the benefit of the experience of the World War?

General HARTMAN. I did not prepare it myself. The chiefs of each one of the divisions were all civilians in for the emergency, well qualified along that line. The job that I had was so large that I couldn't give detailed attention to the engineering and construction and other phases of the office, so I had the chiefs of each one of those divisions—or made him responsible for it—prepare a study as to what organization he had and why he changed that organization, and brought it up to the stage at the end of the World War; and then I had a recommendation from them as to what we should do in the event of another emergency.

Mr. FULTON. Was that quite a large work, taking some little time?

General HARTMAN. I imagine the volume, all typewritten, is about 2 or 3 inches thick.

Mr. FULTON. And was it the result of a considerable number of weeks of study and work?

General HARTMAN. It lasted over several months.

Mr. FULTON. Well, what happened to that, General? Did you find it when you returned?

General HARTMAN. I had five copies made. They were placed in the files, and over the period of years after I left the office they were evidently withdrawn for study purposes, and when I came back in 1934 none was in existence.

The CHAIRMAN. They were never printed?

General HARTMAN. No, sir. They were all in typewritten form, sir.

The CHAIRMAN. They should have been printed. Why were they not printed, General?

General HARTMAN. I don't know, sir. I left the office in 1920, shortly after the books were compiled.

Mr. FULTON. So that, in effect, we lost the result of your study and time. Well, now, when you did first go to the General Staff—I believe it was in 1935—what plans did you find that the General Staff had for construction of cantonments?

General HARTMAN. None, except the plan in effect at that time, that all troops would be housed in existing buildings.

Mr. FULTON. The then mobilization plan?

General HARTMAN. Yes, sir; the then mobilization plan, to use the fairgrounds and certain commercial institutions that they could get hold of.

The CHAIRMAN. No study had been given to the probability that there might be a necessity for training these troops before they sent them to the front?

General HARTMAN. I couldn't say whether they had ever given any study to it. That is what I found, sir.

The CHAIRMAN. There was no plan for that?

General HARTMAN. No, sir. I didn't think it was a very practical thing. My viewpoint, from the construction end, has been that they could not arbitrarily assume control over large buildings in cities and hotels without disrupting everything; but at that time they started the protective-mobilization plan, so any thought along that line, any thought of using that was dropped, because the protective-mobilization plan changed the entire picture, anyway, and we dropped that all out.

Mr. FULTON. Well, General, did they even have plans for typical building units, such as barracks, mess halls, and so on?

General HARTMAN. No, sir. I started in 1919 to perfect the plans, because during the World War they had buildings of 250-man capacity. I recommended early in the war that it be changed, because when a fire happened, we had 250 men to get out, and the man in the middle would have a terrible time getting out of the building. So we cut it back to a 66-man barrack in the latter part of the war. And that is the plan that I was perfecting in 1920 when I left.

Mr. FULTON. What kind of plan did you find in existence in 1935 when you came in?

General HARTMAN. Very little or nothing.

Mr. FULTON. Practically nothing, even on typical building units.

General HARTMAN. That is correct, sir, except the drawings that were partially finished in 1919, which, in my opinion, at that time in 1934, took into account using lumber that you couldn't get in 1934. It specified 20-foot lengths, 16-foot lengths, and I had at that time started through the Planning Section of the Quartermaster General's office an entire revision of those plans to get down to commercial

lengths of lumber that we could buy at any place in the country, preferably nothing over 12 feet long.

LACK OF FUNDS FOR USE BY PLANNING SECTION OF QUARTERMASTER CORPS

Mr. FULTON. So I take it, then, that you were the one who instituted the work in preparing these typical barracks and mess-hall buildings, to which we had some reference in the earlier testimony.

General HARTMAN. I have been pushing it over the years, and I started in the Quartermaster General's office to bring the building plans up to date in 1934. But we had no money, and whatever money and men we could devote to the job had to come out of anything we could get—a side line rather than a fixed job.

Mr. FULTON. General, will you describe the efforts that you made to obtain that and the cooperation, or lack of cooperation, which you received in that respect?

General HARTMAN. I never had any particular difficulty in getting the idea across, because I knew most of the people down in that office. They had worked for me some 19 years before.

Mr. FULTON. And did they agree that the plans should be made and that money should be made available; or, if not available, requested?

General HARTMAN. We had a limited force there and apparently plenty of time to do it, so we only had three or four men working on the plans.

Mr. FULTON. Did you know, General, that in 1935 there was \$418,000 that could have been obtained from the W. P. A.; in 1936, \$470,000; 1937, \$513,000; in 1938, \$1,150,000; that was not being used? ¹

General HARTMAN. I cannot recall those amounts of money, but every time that I saw any money going around that I could use to further the war plans, I took advantage of it. I didn't know about those amounts of money.

Mr. FULTON. At least, you were trying to use whatever money you could get for that purpose.

General HARTMAN. In fact, I used some money that should not have been used for the purpose.

Mr. FULTON. Well, now, how can you account for the fact that when you were trying to get money for this purpose, and when the money was available through the W. P. A., the Staff didn't get the money for you?

General HARTMAN. I don't know how to account for that, sir.

Mr. FULTON. You don't know any reason why you didn't get it?

General HARTMAN. No specific reason; no, sir.

Mr. FULTON. But you do know you didn't get those sums.

General HARTMAN. I know I did not get the money, although I could have used any amount of money that they would have been willing to give me.

Mr. FULTON. How much money did they give you?

General HARTMAN. As I recall, in 1939, something like 60 or 70 thousand dollars, which Colonel Wilson informed me was available and—could I use it? I used that and called for more.

Mr. FULTON. What did you get in '38, when \$1,150,000 was available?

General HARTMAN. In '38 that was, not '39.

¹ Exhibit No. 96, footnote 5 to chart on p. 2263.

Mr. FULTON. In other words, you got about 6 percent of the amount that was available.

General HARTMAN. Well, that is all they had at that time, sir. Otherwise, I would have taken more.

Mr. FULTON. And in '37 how much did they give you?

General HARTMAN. I don't know, because I wasn't in the Quartermaster General's office at that time.

Mr. FULTON. Well, in '36 and '35, how much did you get?

General HARTMAN. I can't recall the amount, sir.

Mr. FULTON. Do you recall getting any for that type of planning?

General HARTMAN. I am under the impression that we did receive some, but that was for construction and earmarked for particular jobs.

Mr. FULTON. Do you recall as much as \$5,000 in those years for planning?

General HARTMAN. I know considerably more was spent than \$5,000—we had to, for the amount of detailed plans that were drawn in '35.

Mr. FULTON. Plans for construction that was immediately contemplated. I meant plans—

General HARTMAN (interposing). I mean mobilization building plans. The sheets for the plans for mobilization, when rolled up, are about a foot and a half or two feet in diameter—something about this size—and to draw those would cost considerably more than \$5,000.

Mr. FULTON. General, as I understand you, in 1938 and '39 you had available the sum of 60 or 70 thousand dollars or thereabouts for planning. Would you tell us how you used it—generally what the purpose and use of it was?

General HARTMAN. I found that the plans which had been started prior to that time didn't take into account that some of the lumber specified was very difficult to get. They were based somewhat upon the war use of lumber, and at that time you could get 16- and 18- and 14-foot lengths of lumber very easily, but at the present market it is very difficult to get anything much more than 12 without paying for it. There is a substantial increase in cost. So that the buildings were designed to utilize whatever we could get in the purely local market, preferably not having anything over 12 to 14 feet—14 feet, if possible—keeping even the 14-foot lengths as low as we could.

Mr. FULTON. What I meant, General, was how big a staff did you set up?

General HARTMAN. In this particular group that I put in in '38, as I recall, we had something like 80 men.

Mr. FULTON. And you started them on this work, and then in July '39, by reason of the expiration of the time that you could, under Army regulations, spend in this area, you were detailed to other work.

General HARTMAN. That is right.

Mr. FULTON. You came back in the spring of 1940, as I understand it.

General HARTMAN. Yes, sir.

Mr. FULTON. Now, will you tell us how much progress you found had been made on those plans during the intervening 8 or 9 months that you had been gone?

General HARTMAN. I found that the plans had been modified. The original idea was not carried out because they had changed the roof design and specified that plywood would be used, as they used in the Air Corps type of construction. That radically changed the framing designs and made the spacing of the studs a great deal wider, and at the time that this thing was started I made the observation that while they could get plywood at 4 cents a foot—three and a half—when you go into a major program it would run to 8 to 10 cents.

Mr. FULTON. And could we get it?

General HARTMAN. At substantially increased cost over ordinary sheathing.

Mr. FULTON. And plywood is a matter of limited production.

General HARTMAN. And that is exactly what turned out. It ran to 8 and 10 cents. By that time we had a quit and go back to the original plan.

Mr. FULTON. In addition to that modification, did you find that the plans had been carried to perfection?

General HARTMAN. No, sir. When I came back in March I picked up the plans and found out that someone had changed them from a 30-foot width to a 24 feet 6, somewhat similar to the C. C. C. type of building. While you seemingly saved on lumber and the over-all construction cost, you are not able to get the ordinary equipment for a soldier in a 24 feet 6 building without overcrowding.

The CHAIRMAN. In addition to these building plans, were there any plans for the lay-out of a camp or the utilization of a mobilization area for as much as a division?

General HARTMAN. No specific plan, Senator, because that is something that couldn't be developed unless we knew what organizations were going in, what the tactical set-up was to be, and that would follow necessarily a detailed survey of the site. Now, along that particular line, it has been my opinion that if we possibly could, we should have all these sites selected years before, and if the mobilization comes along, we pull the jacket out for Dix or Meade or whatever it is, and there it is; but that is the ideal, and there was no money there for that purpose. Furthermore, if we had the money, all we could do was to make the detailed survey of the site, but we wouldn't know what tactical organization was going in there. Therefore we couldn't make a detailed lay-out plan.

Mr. FULTON. Well, General, there seems to have been some money available that wasn't used, and, in addition to that sum, the history of appropriations for the W. P. A. indicates that when the Army wanted more money it was able to get it from the W. P. A. So, if there had been a determined effort by your predecessors to try to get this money, is there any reason that you have to think that they couldn't have gotten it?

General HARTMAN. Not that I know of now, sir.

Mr. FULTON. As a matter of fact, when the W. P. A. was given \$4,679,000,000 the Army only got \$18,000,000, but the next year, when the W. P. A. appropriation was cut down to only a little over \$2,000,000,000, the Army got \$31,000,000, so apparently there was no brake put on the amount that the Army could get if they had a good plan to use it. Isn't that true, General, so far as you know?

General HARTMAN. Unfortunately I wasn't there. I don't know what the background is as to why they were restricted on it. I know it has been uppermost in my mind for years that if I had been there in charge of the division—remember, I was subordinate in this division until March of last year—

Mr. FULTON. We so understood.

General HARTMAN. It had been uppermost in my mind that those things should have been perfected if the money was available. Not being in charge, I had nothing to do with it.

ALLOCATION OF WAR DEPARTMENT CONSTRUCTION CONTRACTS

The CHAIRMAN. General, I am interested in another plan that took place in the Quartermaster General's office, and that is the plan they used in letting contracts. Tell me something about what the procedure was in letting contracts for these camps and cantonments, how they picked the contractors, and one thing and another.

General HARTMAN. If I may go back to the start, Senator, having had the experience of the World War and having read their records and knowing what the War Industries Board had set up for the purpose of selecting contractors, I endeavored to get the organization Mr. Knudsen has now—I forget the name; they call it the National Defense Advisory Board, some such name as that, and it is changed now to O. P. M.—to form a group somewhat similar to the Starrett committee that they had during the World War. That committee was solely responsible for selecting contractors, and it had the imprint of the War Industries Board when the contract came to the Construction Division. I wanted that same set-up at that time so that when we wanted a contractor for a job, we would call on the Advisory Board, and they would name to me the man to do that job. Apparently they were set up as an advisory group and couldn't do that, so I formed my own committee.

At the start I wanted five men, preferably a constructor, an engineer, and possibly a man from the bonding company, and a labor representative.

Mr. FULTON. First, General, what plans did you find in the files for that?

General HARTMAN. For that?

Mr. FULTON. For taking care of the selection of contractors. Were there any plans?

General HARTMAN. I am leading up to this Board, sir.

Mr. FULTON. No; but I mean before you gave consideration to it, were there any plans at all for that?

General HARTMAN. None except some lists of contractors which were under consideration for the Panama work in 1938.

Mr. FULTON. Those were just specific contractors for specific jobs, but you found no attention had been given to that problem, so far as the files indicated it, in those intervening 20 years?

General HARTMAN. Just a list of contractors is all, sir.

The CHAIRMAN. Proceed with your program, General.

General HARTMAN. Well, I formed this particular committee, and at that time I changed about having a bonding representative and a

representative of labor, and confined it to three—one constructor and two engineers. Those men are a matter of record here: Messrs. Blossom, Dresser, and Harvey. They were purely advisory to the Quartermaster General. I asked the Quartermaster General to take them under his wing and not make them part of the Construction Division, although they had been selected by me, because the Quartermaster General was too busy to look after it himself. It was his committee. They advised me. When I called upon them for a type of contractor, they would advise me with a list of three names of the men they thought to be best qualified for the job, and out of those three I would select one.

The CHAIRMAN. The three men on the advisory committee, then, were responsible for the selection of three names, and you took one of the three?

General HARTMAN. They were responsible, Senator, for studying the records of some 6,000 or 5,000 contractors (I have forgotten the exact total, a very large number) and narrowing it down to where it could be handled by me. We take the records of the three——

The CHAIRMAN (interposing). What sort of system did they use to decide on letting a contract, for instance, we will say in North Carolina? Did they consider North Carolina contractors?

General HARTMAN. I initiated that policy myself with the Secretary, and recommended that we utilize, as far as possible, local talent, because I thought that the local contractors, if they were competent to handle the job, would be better qualified to handle labor and know the material market in their particular territory.

The CHAIRMAN. But they didn't follow that rule very closely, did they, General?

General HARTMAN. Yes, sir; very closely, when it is based on the yardstick that I gave them: First, that the man had to be competent to do the job that we had in hand, and in the time that we had to do it.

The CHAIRMAN. I am familiar with some contracts that were let in my territory. They went to Detroit and Minneapolis and Chicago, I think, to let those contracts.

General HARTMAN. That rule is violated advisedly after discussion with the Secretary and the Office of Production Management. Now, where we had a particular type of job to be done and it was a specialist's job, we picked the specialist contractors and engineers to do that work.

Mr. FULTON. Well, General, you heard General Seaman's testimony, did you not?

General HARTMAN. Yes, sir.

Mr. FULTON. I think he indicated that he couldn't see why it wouldn't be possible quickly and easily to let lump-sum contracts for these large cantonments, and that therefore he hadn't thought it necessary to plan anything else.¹ Do you care to make any comment on that?

General HARTMAN. Within the time limits we had for this construction, it would have been a physical impossibility to meet the troop schedules and go on a lump-sum-bid basis for a major portion of the camps, because nothing was known about sites whatsoever, or what troops were to be housed.

¹ Supra, p. 2018 et seq.

Mr. FULTON. At the time you came in, nothing was known about sites, and these plans had been modified, as you indicated, in such a way that you thought they had to be reworked.

General HARTMAN. I had the plans completely modified and brought down in the latter part of April 1940.

Mr. FULTON. What kind of information did General Seaman turn over to you as to the proposed camp program, or was there none at that time in his office?

General HARTMAN. He turned over none because we had no information on it.

Mr. FULTON. When did you first get information that the Army proposed to build this large number of camps on these widely scattered sites, many of them new?

General HARTMAN. In May of 1940.

Mr. FULTON. May of 1940.

General HARTMAN. But realizing world conditions, as soon as I came in on the job, my first task was to check on the war plans.

Mr. FULTON. But it was May of 1940 when you first heard of this, as chief of construction?

General HARTMAN. When I got that official word on it; yes, sir. That is when we made our estimates for the housing of 1,400,000 men.

ESTIMATED COSTS OF CAMP CONSTRUCTION

Mr. FULTON. Now, at that time were you asked to draw up estimates of the cost of such housing?

General HARTMAN. Yes, sir.

Mr. FULTON. Will you tell us whether the estimates that were made were made by you or, if not, how they were made, because they have been completely and largely exceeded?

General HARTMAN. The estimates were not made by me personally. They were made by the office, and they were checked. During the past year we had the Air Corps work. We had a limited number of buildings under the present plans that were under way—very few. But they had the records of the Air Corps work, and they based that on the cost per cubic foot.

Mr. FULTON. That was a pretty haphazard way of doing it, wasn't it?

General HARTMAN. Yes, sir; in a sense; but I corrected the complete bills of material, and in the absence of any labor cost or record of it, I used the factor of 50-50, 50 percent materials, 50 percent labor, and that would be the cost of the building. Get the detailed cost of the bill of material and multiply it by two, and that was the cost of the building.

Mr. FULTON. But, General, you did have some figures there from which you could have constructed or reconstructed the cost that had been obtained in building a typical barracks unit, did you not?

General HARTMAN. Yes, sir.

Mr. FULTON. From that you could easily have seen that the amount of the allowance that was being made in these camp sites was completely and wholly erroneous, could you not?

General HARTMAN. We never—my office never contemplated building what we have now with the amount of money that we received from Congress. My estimate was \$650 per man in May of 1940—\$780,000,000 for the things that they have in the camps today.

Mr. FULTON. The Army told the Congress—

General HARTMAN (interposing). No, sir.

Mr. FULTON. That their estimate was \$400 per man for barracks, and less than that for tents.

General HARTMAN. No, sir. That was the estimate that I was directed to put in. First, the staff gave me the entire list that was needed for the camps, which they said they wanted in the camps. After consultation and showing this estimate, they said we would not be allowed to ask Congress for more than \$362 per man for cantonments, and my reply to that was that if that is all the money we are going to get, if you want all these facilities, we will have to stop when we get to \$362 worth, and everything below that can't be done.

Mr. FULTON. You mean by that, General, that you and the Army knew that the estimate you were giving to Congress was not a correct estimate of the cost?

General HARTMAN. It was a correct estimate for the things that I stated I could do. I have forgotten the total number of items. There may have been, say, 25 listed on 2 sheets. When we got to the \$362 mark, I said that is all I can do with this amount of money.

Mr. FULTON. Well, General, let me understand, if I can. You had, in the War Department, figures from actual construction from which it was possible to find the cost that you had actually had in building the barracks.

General HARTMAN. Yes, sir; and they ran about \$7,000 to \$7,500 on a lump-sum basis at that time. We had not built any up North, but I estimated at that time it would run somewhere around nine or ten thousand dollars apiece, afterward confirmed by the work at Fort Ethan Allen on a lump-sum basis of \$11,125, as I recall it.

Mr. FULTON. From that, it was perfectly obvious that if those actual figures of actual costs had been used, you couldn't build the camps for any \$400 per man.

General HARTMAN. Not a complete camp, as you have it now; no.

Mr. FULTON. And not as it was expected and intended to build the camps at that time.

General HARTMAN. Well, my understanding and my directions were that for the \$350—I want to make that distinction now, because when the estimates were received by the Appropriations Committee, I believe it was four hundred-some-odd dollars per man.

Mr. FULTON. \$400. Then they took off \$50 for utilities, leaving the \$350 that you speak of, and that \$50 was just an arbitrary figure picked out of the air.

General HARTMAN. That was the amount of money that was to be spent for a part of the facilities which they wanted to use for the housing of these men.

Mr. FULTON. It had no relation to any definite estimate of utility cost, had it?

General HARTMAN. Only on the schematic lay-out of the utilities.

Mr. FULTON. Not even that, did it?

General HARTMAN. It took care of the utilities inside of, say, the regimental areas.

Mr. FULTON. But did it? Was there any plan for such utilities and any estimate as to the cost?

General HARTMAN. They were in the schematic drawing.

Mr. FULTON. How did you estimate that cost?

General HARTMAN. Whatever the cost of the material was at that time and an average figure, I presume, now, because I didn't make the detailed estimate. They should have estimated the cost of the material and then an average of what depth they would have to put the material under average conditions. That would be the logical way.

Mr. FULTON. Are you sure they did that, General?

General HARTMAN. I am not sure on that, sir.

Mr. FULTON. That \$50 doesn't have much relation to the actual cost of the utilities, not even remote.

General HARTMAN. No; because we didn't know where these camps were going at any stage of the game until the actual site was picked out. We had nothing to do with it.

Mr. FULTON. Isn't it a fact, then, that this \$50 per man for utilities was just a figure picked out of the air?

General HARTMAN. You can call it that; yes, sir.

Mr. FULTON. Now, with respect to that \$350, isn't it also a fact that the Army knew you couldn't build the camps with the type of barracks they intended to use for any such sum as that?

General HARTMAN. The instructions I received was that when we reached the limit of \$350, the things below that total amount of money would not be built.

Mr. FULTON. In other words, you wouldn't house the Army.

General HARTMAN. Well, we would have the essential things, barracks, mess halls, storehouses for the quartermaster, and storehouses for the organizations, and temporary roads. That is all you were going to get in those camps for the \$350.

Mr. FULTON. Was there any such plan at any time to make a lay-out plan for camps? Were these architect-engineers that were hired on fixed fees told to make a lay-out plan of that type, or did the Army from the first contemplate that the cost would be several hundred million dollars more than they had asked Congress for?

General HARTMAN. I couldn't tell you what they contemplated. I was ordered and told that I could not get any more than \$350 a man.

The CHAIRMAN. I want to ask one question, General. What were the duties of these architect-engineers that were employed on these jobs? What were they supposed to do?

General HARTMAN. Take the standard plans as we had them and, after a detailed survey of the site, make a detailed lay-out plan and place these facilities that we have in that detailed lay-out.

Mr. FULTON. Going back to this question of the Army situation, do you mean that it was determined that irrespective of what it might cost, instead of estimating the cost, you would pick a figure of \$350 plus \$50 and say that is what it would cost, just as you might take 2 yards of clothing material and say you would make a suit out of it whether it was enough or not?

General HARTMAN. I don't know what the reason was. My instructions were that \$350 is all you are going to have, and I made

the remark at that time that if \$350 is all I am going to get, that this is all you could get—above that line.

Mr. FULTON. Did you make any plans and did you have the architects make any plans on the basis of using the amount of money that you were to get, or did you simply plan for the camps as the Army wanted them, irrespective of what the cost would be?

General HARTMAN. I gave instructions and followed the schematic lay-out of the units, and we would put the facilities that we could build in that schematic lay-out, knowing full well that if it goes into the stage that it is in today, all the other facilities on that list would have to come in time, and they did.

Mr. FULTON. And knowing that if they were put in piecemeal afterwards, it would cause a great dislocation in the contractor's plans.

General HARTMAN. Very likely it would, but I didn't consider that question at all. I made the schematic lay-out and put the facilities that I could build with \$350 within that lay-out, and let them expand later.

Mr. FULTON. Now, did you actually, in making a lay-out for each camp, take Camp Meade, where I think the cost ran around seven or eight hundred dollars a man, ever have a plan that contemplated building Camp Meade at \$400 a man?

General HARTMAN. No, sir.

Mr. FULTON. And the same is true of every other camp, is it?

General HARTMAN. I never knew until the directive came down to me, where the camp was to be, and quite frequently had to have the architect-engineer go down to the site and have it detailed to the architect and the contractor.

Mr. FULTON. Well, most of those directives—I think the first ones you got were in August, weren't they?

General HARTMAN. Yes, sir.

Mr. FULTON. Blanding was one of the first. So that at the time you made the estimates you didn't have any idea where the camp was to be, did you?

General HARTMAN. No, sir.

Mr. FULTON. And instead of your making an estimate and giving it to the Army, the Army told you what the estimate should be and directed you, in effect, to give them back the figure they gave you.

General HARTMAN. In effect, that is what has happened, sir.

Mr. FULTON. Well, wouldn't that constitute a kind of deception of the Congress not to indicate that those estimates were completely without foundation?

General HARTMAN. My testimony before the committee clearly indicated that I would have to come back for more money.

Mr. FULTON. Did you tell the committee that the estimates were not in fact estimates at all?

General HARTMAN. Well, they were estimates.

Mr. FULTON. How could they be?

General HARTMAN. They were estimates for \$350, which was to cover the items that I said I could do within that money.

Mr. FULTON. But how could you know that when you didn't know where the camps were to be or what was to be included in them?

General HARTMAN. Only on the general proposition that if I have an average site I could put these facilities in for \$350.

The CHAIRMAN. That is all, General. Have you any comments you care to make on your own time, General Hartman?

General HARTMAN. The committee should take into consideration the conditions existing from the period that I took over in March until I went to the hospital in December. At that time I had 14 officers in the division and, I believe, roughly, 1,200 civilian employees, all employed on permanent construction. We were then drawing to a close over the last 15 years of a \$542,000,000 permanent housing program, a part of which I was sent down on in 1938, some \$80,000,000 to be allocated in less than 6 weeks. That is the work that I was on for that year, in '38 and '39.

Now, in May 1940 we were informed that cantonment housing was to be started, and we in effect started from scratch.

The CHAIRMAN. Well, General, I am bound to make one comment. So far as the testimony goes, you seem to have been the only man in the War Department dealing with construction matters, that at least contemplated a plan for the future.

General HARTMAN. It has been a subject very close to me for 20 years, sir, and if I had the means or the authority, I would have had detailed plans, just as you contemplate here, sir.

The CHAIRMAN. I wish you had that authority.

The committee will adjourn until 10:30 tomorrow morning, when we will have some O. P. M. witnesses before us.

(Whereupon, at 12:05 p. m., the committee recessed until 10:30 a. m. Wednesday, August 13, 1941.)

INVESTIGATION OF THE NATIONAL DEFENSE PROGRAM

WEDNESDAY, AUGUST 13, 1941

UNITED STATES SENATE,
SPECIAL COMMITTEE TO INVESTIGATE THE
NATIONAL DEFENSE PROGRAM,
Washington, D. C.

The committee met at 10:45 a. m., pursuant to adjournment on Tuesday, August 12, 1941, in room 318, Senate Office Building, Senator Harry S. Truman, of Missouri, presiding.

Present: Senators Harry S. Truman (chairman) and Tom Connally.

Also present: Hugh A. Fulton, chief counsel; Charles P. Clark, associate chief counsel.

The CHAIRMAN. Is a representative of the die casters present?

Do you solemnly swear that the testimony you will give in this proceeding will be the truth, the whole truth, and nothing but the truth, so help you God?

Mr. GOLDHAMER. I do.

TESTIMONY OF W. M. GOLDHAMER, VICE PRESIDENT, SUPERIOR DIE CASTING CO., CLEVELAND, OHIO

The CHAIRMAN. Will you have that seat over there and give your name and connections to the reporter, please?

Mr. GOLDHAMER. Walter M. Goldhamer, of Cleveland, Ohio, representing the American Die Casting Institute, whose membership comprises approximately 90 percent of the productive facilities of the die-casting industry.

EFFECT OF PRIORITIES ON DIE-CASTING INDUSTRY

The CHAIRMAN. Will you state for the benefit of the committee your experience with priorities and what is happening to the die casters?

Mr. GOLDHAMER. Yes, sir. The die-casting industry uses primarily zinc and aluminum in the fabrication of its products. The aluminum was placed under mandatory priority control early in 1941. The zinc, which the die-casting industry uses, was placed under partial priority control early in 1941, but the effect of the partial priority control has been the same as the full priority control in the case of aluminum, as far as the die-casting industry is concerned. There have been restrictions on the amount of material available to the die-casting industry in both zinc and aluminum and it is those restrictions which have caused us to go to the O. P. M. on two or three occasions, commencing in April of 1941, requesting their further

investigation of the hardships which were being worked on the die-casting industry and on its literally thousands of customer industries in every field as a result of the withdrawal of supplies for the die casters.

One of the early efforts of the O. P. M. was directed toward encouraging the users of die castings to substitute other materials and methods of fabrication for die castings in the interest of conserving the supplies of aluminum and zinc for defense purposes.

Senator CONNALLY. You make dies for everybody? You don't confine it to defense?

Mr. GOLDHAMER. No, sir.

Senator CONNALLY. Of course, don't you realize that if that is the case, under the priorities rule some of these civilian customers are going to be denied that?

Mr. GOLDHAMER. We understand that.

Senator CONNALLY. You understand that and you cooperate with the O. P. M. in doing that sort of thing?

Mr. GOLDHAMER. Our industry has cooperated very fully, and I think the O. P. M. has been extremely efficient and successful in causing the customers of the die-casting industry to eliminate the use of die castings in the interest of saving critical material wherever possible.

Senator CONNALLY. You make these dies, or molds, as it were, for other metals. Is that right?

Mr. GOLDHAMER. May I take the liberty of showing you what die castings are, in the interest of getting a better understanding?

Senator CONNALLY. I mean, you make some other sort of metal thing by pouring the metal in a mold.

Mr. GOLDHAMER. That is right. We make a steel die into which the molten metal, either aluminum or zinc, is forced under extremely high pressure, and this is the die casting which is removed from the steel master die. The value of the die-casting industry is that it is probably the greatest single factor contributing to the success of mass production.

Senator CONNALLY. Is that thing there used as such, or is that merely a die?

Mr. GOLDHAMER. That is the casting.

Senator CONNALLY. That is the casting?

Mr. GOLDHAMER. It is complete in itself and requires no further work on it in order to be used.

Senator CONNALLY. In a machine, some sort of a machine?

Mr. GOLDHAMER. This is a part of a gasoline pump. It is the main frame which supports all the moving parts.

Senator CONNALLY. What is that made of?

Mr. GOLDHAMER. This is made of zinc, a zinc base alloy containing 4 percent of aluminum, 1 percent of copper, and a small amount of magnesium. All of these castings here represent the value that the die-casting industry contributes in service to mass-production industry by reproducing accurately, rapidly, and at low cost, intricate parts, both mechanical and ornamental, but primarily mechanical, which cannot be reproduced at the same cost or with the same speed by any other method of fabrication. This part, for instance, which is used in a kerosene refrigerator for use on farms, would have to be made, by

any other method, either as an assembly of several parts which would have to be fabricated separately and then put together, or machined from a sand casting or forging, which would necessitate the use of milling machines, automatic screw machines, lathes, drill presses, all of which are critical equipment at the present time.

Senator CONNALLY. Let me ask you this question. Is your industry integrated so that as a whole you can carry out these Government policies as to priorities and devote yourself to making the things, first, that the national-defense needs?

Mr. GOLDHAMER. Yes, sir.

Senator CONNALLY. You have pretty good control of your industry.

Mr. GOLDHAMER. Yes, sir.

Senator CONNALLY. Is it highly organized?

Mr. GOLDHAMER. Yes, sir; we have an American Die Casting Institute, representing the greatest part of the industry, approximately 90 percent of its productive capacity, and it is the institute itself which has been going into the matter with the O. P. M. directly.

The position that we find ourselves in is that the restriction on die castings today forces the discontinuation of parts made by the die-casting process which could not readily already have been substituted with other material. It has reached the point where the majority of substitutions under the direction of the O. P. M. have already been made. Those residual applications, such as these, cannot readily be converted into stampings or screw-machine products or other methods of fabrication, either because mechanically and technically it is not possible to do so, or because the cost of doing it is so prohibitive that it would prevent the manufacturer from actually selling the article into which this assembly goes.

The CHAIRMAN. Does that apply principally to civilian articles and things that are used in ordinary business rather than to national defense?

Mr. GOLDHAMER. It applies to both, but we have been getting the material necessary for our defense production. The problem is that defense production in our industry does not exceed over 20 percent of the total volume. The balance of 80 percent is used by ordinary civilian industry in such places as machinery parts, farm equipment, appliances, almost every kind and type of device that is made; and the problem that is extremely critical is the fact that our customers today, by and large either have not yet been successful in getting defense production on a subcontract basis or their defense production represents a relatively small portion of their total volume. If they are not able to continue with their normal manufacturing until such time as they are able to swing over into full defense work, their facilities will not be available for the defense program when the time arises when they will be needed.

The CHAIRMAN. How many of these companies are there?

Mr. GOLDHAMER. The die-casting industry amounts to only 125 producers, but its customers are some 5,000 manufacturing establishments in almost every other industry in the country.

The CHAIRMAN. And 80 percent of them, you say, will go out of business unless this—

Mr. GOLDHAMER (interposing). It is not a matter of going out of business; it is a matter, in many cases, of severe reduction or curtail-

ment in manufacturing. Some of them will go out of business, but by and large the majority of them will be faced with drastic restriction in the amount of material they are able to fabricate. The die-casting industry is merely a focal point for all these other industries. We only use zinc and aluminum, which are the critical materials, in terms of what our customer industries need in zinc and aluminum for their products. If our customers were engaged exclusively in defense manufacturing, then all the die castings which we supplied them would be needed for defense and there would be no problem. The fact is that most of our customers' defense work is not yet a large proportion of their production.

Senator CONNALLY. Right on that point, has your institute any rule of its own on priorities on these products for companies that are making defense articles?

Mr. GOLDHAMER. All the priority rulings have been laid down by the O. P. M., and have been followed by our industry. Our industry makes no rules of its own with reference to that.

Senator CONNALLY. I know; but O. P. M. makes priorities as to raw materials principally.

Mr. GOLDHAMER. That is right.

Senator CONNALLY. But I am talking now about when you are selling these dies to your customers. Don't you give preference to those that are engaged in defense plants?

Mr. GOLDHAMER. Oh, yes. Our customers furnish us with indications of the preference rating applicable on the particular material which they are buying, and all die casters fill the defense-requirement orders first.

Senator CONNALLY. That is what I am talking about. You ought to have your institute, if it is what you claim to be, set up some sort of arrangement whereby you route these orders to your customers so as to see that the defense producers get the advantage in the first order.

Mr. GOLDHAMER. That is already being done, sir.

Senator CONNALLY. You ought to keep it up.

Mr. GOLDHAMER. There isn't any question about that, because the nature of the priority system applicable to defense material is automatic in our industry as well as in all other industries. In the case of aluminum today, the actual raw material for defense requirements is shipped to us before we get any material that can be used for non-defense requirements, and the situation that exists in the die-casting industry today is that many plants are stopped running at the end of each month until they get the allotment of material first for the defense orders and then later in the month for their nondefense orders.

The problem that we see as extremely critical is the fact that substitutions which have been made for die casting have caused a more critical problem than the original problem of the strategic materials themselves, for this reason: If a die-casting user, using this part in an assembly, is told to substitute another product, he will go out and make a sand casting of this, which will then have to be machined on all the accurate, important surfaces. That means he is using machine tools that he did not previously use for nondefense manufacturing, which machine tools are very critical and needed greatly for the defense program. He is using skilled labor to operate those machine tools. In addition to that, if he changes to brass, he is causing a

bottleneck and a shortage in brass, which has today proved to be very critical. Copper is also critical, and that is one of the so-called substitute materials which has been adopted.

In the case of plastics, the plastics situation has presented obstacles which today are just as critical as the zinc situation itself.

Senator CONNALLY. What is your suggestion? How can it be corrected?

Mr. GOLDHAMER. We believe, we feel very strongly, that the amount of material going to the die casters shall not be restricted further, nor shall it be reduced until such time as the subcontracting program in defense manufacturing has filtered down to most of the plants using these critical materials so that they can swing over to defense production without causing unemployment through loss of production in their plants. In other words, the amount of production being turned out by our industry today is that residual portion which cannot readily be substituted into other materials or methods, and if we stop supplying or further curtail our customers in the various industries in this country, they will not be able to continue manufacturing their normal products in the same quantities, in anywhere near the same quantities, that they have previously, and the result of that will be—

Senator CONNALLY (interposing). Of course, if they make defense material at all they will not be able to maintain their former production of civilian supply.

Mr. GOLDHAMER. Most plants are doing defense work in addition to their normal volume or as a separate operation from their normal operation. For instance, I call to mind one manufacturer of gasoline pumps who uses this particular item, who is doing the equivalent of approximately 30 percent of his normal volume in gasoline pumps in the form of shell manufacture; but that required an entirely new plant set-up.

Senator CONNALLY. There is no danger of his going out of business. You are talking about forcing him out of business. He is doing more business than he did before.

Mr. GOLDHAMER. No; only 30 percent of his volume is in shells; 70 percent of his total volume is still in gasoline pumps. He couldn't run his plant and keep his force together on 30 percent of the volume.

Senator CONNALLY. I understand, but you say he is doing more than he did normally. He is keeping up his civilian work and picking up 30 percent on defense.

Mr. GOLDHAMER. By that I mean if we continued to be able to supply him with the same quantities of material which we had previously supplied him, the defense program would be superimposed upon his normal volume, but as our delivery of die castings to him shrinks, then his normal volume also shrinks, and if it drops too far he will not be able to absorb the overhead burden which enables him to keep his plant going so he can do the 30 percent of defense work which he has. There are many instances of plants which do not have the equipment or the facilities to take prime contracts for defense that are attempting to do subcontracting, but have not yet succeeded in lining themselves up on defense work. If those plants are not able to continue their normal products and their normal manufacturing, if their skilled technical help and their skilled manpower forces are dissipated

in advance of the time that they get defense contracts, they won't be in a position to serve the defense program when they are called upon.

We know that the die-casting industry, which has been such a vital factor in the development of mass production in this country, will ultimately have to be used completely in the defense program. The Ordnance Departments of the Army and Navy and the Air Corps recognize that. They have not arrived yet at the point in production where the industry's resources can be used completely. If we are not in shape to take on that defense production when that time arrives, because our manpower has been dissipated, then we will have created a more serious problem by our inability to deliver defense production than the original problem of shortage of material itself.

This thing has resulted merely, as far as we are concerned, in a transferring of bottlenecks from one point to another.

Senator CONNALLY. Can't you invent another term instead of bottleneck?

Mr. GOLDHAMER. I would like to.

Senator CONNALLY. It is overused now—bottleneck. Go ahead.

Mr. GOLDHAMER. I would like to be able to invent another one, but I don't know one that better describes the picture. The substitution of materials by the die-casting user has caused critical situations to arise where they weren't in existence originally. At the time that the O. P. M. recommended that plastics and brass be substituted for die castings, brass and plastics were not considered critical. The substitutions have been made, and now plastics and brass are critical. In addition to that, the machine facilities that have been required to effect the substitutions are today as critical as the material which were substituted themselves. The problem, then, becomes even more aggravated, because if you reach the point where those residual applications which cannot be readily substituted can't be supplied by the die-casting industry, you reach the point where you will dissipate the productive facilities of the plants that are dependent on this type of material as a source of supply.

The die-casting industry is contributing already a very valuable effort in the defense program. A part such as this, which is an aluminum die casting used by the aircraft industry in the manufacture of the automatic pilot for bombers, was previously made as a forging, machined at a cost of several times the cost of the die casting, and at a proportionally slower speed. The die-casting industry has a distinct contribution to make in the defense program. It must be kept intact until such time as the defense program needs to utilize completely its resources. This is not a plea for special privilege or for a special treatment for the die casters, it is a plea purely on the cold basis of fact that if our industry is not permitted to continue on its present restricted level until such time as the defense program develops a need for its use, greater danger will be done to the defense program than the mere shortage of material itself.

Senator CONNALLY. A very intelligent statement, sir.

Mr. GOLDHAMER. Thank you, sir.

The CHAIRMAN. Mr. Biggers. You have been sworn, haven't you, sir?

Mr. BIGGERS. Yes, sir.

TESTIMONY OF JOHN BIGGERS, DIRECTOR OF PRODUCTION, OFFICE OF PRODUCTION MANAGEMENT—Recalled¹

The CHAIRMAN. Mr. Biggers, we are particularly interested in the personnel situation at the O. P. M. Senator Connally is particularly interested in it, and I asked you to come here to furnish the Senator with the information in which he is interested.

Proceed, Senator.

Senator CONNALLY. Mr. Biggers, Senator Truman is kind of putting me on the spot.

The CHAIRMAN. Not intentionally at all.

Senator CONNALLY. I am a mere humble member and instrument of this committee. I am just doing what the committee wants me to do.

The CHAIRMAN. The committee has delegated you to do that job.

PRIOR BUSINESS CONNECTIONS OF OFFICE OF PRODUCTION MANAGEMENT PERSONNEL

Senator CONNALLY. I thought you were probably in a good position to dissipate some rumors. Lots of rumors are going around—I don't know whether they have any foundation or not—that there are a lot of men in the O. P. M. that come down here from their business connections and get integrated over there, and a little later their old companies or their old golf partners or poker friends get a lot of rich contracts, so I would like for you to kind of give us a picture of that situation, because I think, in the interest of the O. P. M., if that is not the truth, the country ought to know it.

The CHAIRMAN. Rumors have come to this committee that as much as a billion and a half or two billions in contracts have been let to companies who were represented on O. P. M. by dollar-a-year men. We want to know how true that is and what the connection is. In fact, I think some of that has been confirmed by O. P. M. itself.

Mr. BIGGERS. Mr. Chairman and Senator Connally, I am glad for the opportunity to speak on this point. I wish that Mr. Knudsen might have the opportunity, because he could speak of the over-all picture perhaps.

Senator CONNALLY. He is not in town, is he?

Mr. BIGGERS. He is not in town today.

Senator CONNALLY. We will be glad to hear him when he comes back.

Mr. BIGGERS. The fact is that from the first day that he and others came down here as members of the Advisory Commission on National Defense on June 3 of 1940, Mr. Knudsen's primary policy, which we have all followed, was that we must get men who knew the problems industrially, but we must strive to get men whose companies and individual interests had no connection with the problems over which they were presiding, over which they were making decisions, and I can give you some examples.

For instance, one of the first problems we had was to get a man in charge of machine tools who could wrestle with that problem, which

¹ Mr. Biggers' previous testimony was given on July 22, 1941. See Hearings, Part VI, pp. 1605-1620.

was big from the outset, and Mr. Knudsen turned to Harold Vance, who was the chairman of Studebaker and a man with vast experience in the use of machine tools, but not engaged in the manufacture of machine tools. When we had problems dealing with heavy ordnance, we entrusted those problems initially to Mr. Vance, because he had been with the Bethlehem Steel Corporation during the World War and had made heavy ordnance but now had no connection with it whatever. He chose as his principal assistant the man who succeeded him, Mr. Mason Britton, whose experience had been in the publishing business, publishing technical journals to the mechanical trades, and in 25 years of experience he had gained a very intimate knowledge of machine tools and their functions and possibilities but wasn't engaged in the manufacture of machine tools.

Another early problem was construction. They started in with the program of camp construction, cantonments, and Army bases, and air bases, and plants, and all that, and we were importuned to get an outstanding architect or an outstanding engineer or an outstanding contractor, and we demurred and spent quite a little time trying to figure out who would be best qualified to handle that responsibility. We determined that the American Telephone & Telegraph Co., year in and year out, did more building throughout every State of the Union than anybody else in America; it averages something like \$400,000,000 a year. So we telephoned Mr. Gifford and asked for his top man in charge of construction, and he sent down Mr. W. H. Harrison, who is vice president and chief engineer of A. T. & T. and had charge of their whole engineering and construction activities. At very considerable sacrifice to A. T. & T. and Mr. Harrison, we persuaded him to lend us his service and put him in charge of construction, because we felt in so doing we had a man who didn't have any prejudices in the industry.

We tried that in every direction. When it came to powder and explosives and ordnance items, we turned to a man by the name of E. F. Johnson, who had been with du Pont in the World War and at the age of 29 had been placed by them in charge of the building of the Old Hickory plant, which was completed in 5 months and 17 days. It was that great powder plant that du Pont built in the World War. Johnson had 32,000 men on construction and operations under his direction by the time he was 30 years of age. He subsequently went with General Motors and retired from business at an early age, 10 years ago. Mr. Knudsen knew him personally and knew his background, and he reached out and persuaded Johnson to give up the ease and comforts of his life and come down here and take this kind of job without compensation.

Senator CONNALLY. Is he still here?

Mr. BIGGERS. Yes, sir. We felt that Johnson knew that problem, knew explosives, knew a good deal about the manufacture of ordnance, which is a highly technical subject, and yet had no personal connection with any of the companies that might be called upon.

And so, in all the different branches that effort was made.

That personnel moved over into O. P. M. when it was formed in January. I was Mr. Knudsen's deputy in the Defense Commission. I am a glass manufacturer. My company is Libbey-Owens-Ford. We make nothing for defense; it is just out of our line. But when

O. P. M. was formed they appointed me—the O. P. M. appointed me, with the approval of the President—as Director of Production, and Mr. W. L. Batt, who was also asked to be here today, and who is president and chairman of the S. K. F. bearing organization, as Deputy Director. So, to us were entrusted the responsibilities of production, which had been under Mr. Knudsen, and also raw materials, which had been under Mr. Stettinius.

We took over the personnel selected by those two men along the general lines of policy which I have outlined, and to the very best of our ability, all during these intervening months we have refrained from having a man in charge of a department who decided on anything affecting his company or his industry. In the ranks we have had to have technical experts that we drew from the steel industry on steel, or that we drew from the chemical industry on chemicals, but with almost no exceptions that I can think of has anybody been in a position to influence business to his own company even if he chose to do so.

Now, it is, of course, true that when we turned to industry at the President's direction to get men who were competent to help with the production of defense, we had to borrow men from General Electric, we borrowed a vice president in charge of production from Chrysler, we borrowed a vice president from Westinghouse, we borrowed a purchasing agent from Ford. Mr. Knudsen himself was taken out of General Motors. He gave up his position, gave up his salary, gave up all connections with that company.

PROCEDURE FOLLOWED IN ALLOCATING DEFENSE CONTRACTS

Mr. BIGGERS. Those big companies, General Electric, Ford, General Motors, have inevitably received a substantial volume of business in this defense program, but I think I could very definitely say not by solicitation, but almost exclusively by the Army or the Navy or the Air Corps or the Merchant Marine asking them to undertake some job, some specific job. Chrysler didn't seek to make tanks. We felt that we had to get somebody with mass-production experience to make tanks. We turned to the locomotive builder, to the car builder, but we also wanted a mass producer, and we turned to Chrysler and asked them to undertake that job. In an Army arsenal, financed by the United States Government, Chrysler is building tanks. They charge a fee of \$2 for supervising the construction of that plant, and they manage the plant on an agreed basis with the Ordnance Department, but the plant is owned and the equipment is owned during the emergency and afterward by the United States Government.

Du Pont was turned to.

The CHAIRMAN. How much per tank does Chrysler receive for the finished product? Any profit?

Mr. BIGGERS. In that particular case, sir, they quoted a price, and my recollection is (it was a year or more ago) that the price was something like \$33,600 for the tank as it was then designed, to be made in this ideal plant, and that price was about 60 percent of the price at which the Government was able to buy tanks from other sources operating under less ideal conditions and with facilities provided in large measure by private capital. In this case, you see,

Chrysler not only had the advantage of an ideal lay-out, but they also had the advantage of operating a plant where there was no depreciation charged against cost, so you can't make a direct comparison, but it was the judgment of the military authorities that their price was extremely low in relation to others.

The CHAIRMAN. Do you know what the Chrysler profit per tank is?

Mr. BIGGERS. No, sir. They haven't reached the point where they are making any profit, because they had to build that plant; they had to wait for the medium tank to be engineered; then they had to build pilot models, and they are now just in the early stages of production, and I am sure they haven't yet reached a profit point at all. What their profit may be—

Mr. FULTON (interposing). It was a fee, wasn't it, not a profit?

Mr. BIGGERS. I know the original contract was a price-per-tank. Whether that has ever been modified by the Army I don't know, but, if so, without my knowledge. The original contract was so much per tank.

Now, the tank has been subsequently changed in design and in weight, and there may have been some change made in the price, or there may have been some change made in the basis of compensation.

The CHAIRMAN. Chrysler furnishes the material and the labor; the Government furnishes the building.

Mr. BIGGERS. And the equipment.

The CHAIRMAN. And the equipment.

Mr. BIGGERS. Yes, sir.

The CHAIRMAN. Proceed.

Mr. BIGGERS. The main contribution Chrysler made was placing at the disposal of this job the great engineering and managerial organization which they had, experienced in mass production. They put 197 engineers on the mere work of the lay-out and the figuring of this job before they ever got a contract from the Government. After they were approached to undertake this task, they had 197 engineers working day and night and a good many Sundays and every Saturday during that period of preliminary study of what they would need and what they could do, and when they came down here with the proposal it was deemed very favorable by the Government. But I know that Mr. Knudsen even then obtained a personal guarantee from Chrysler that if the profit from that operation resulted in more than might be deemed reasonable they would voluntarily make refund to the Government. That is, outside of the contract terms, but it was his idea of protecting the interest of the Government.

Mr. FULTON. How much was deemed reasonable? How was the basis made?

Mr. BIGGERS. The Army was more than satisfied with the proposal. Mr. Knudsen just requested that of them as a special protection against what might be deemed by the United States to be any unreasonable profit.

Mr. FULTON. But how was the original profit which was considered reasonable arrived at? What was the amount of it?

Mr. BIGGERS. I don't know what they figured in their cost, because you see they were figuring on the manufacture of an article which had never been made in quantities in the United States by anybody.

The Army judged the fairness of their price by the fact that it was so much lower than any price they had been able to get from any other source and from competitive sources.

Mr. FULTON. Did the Army itself have a price that it thought it could manufacture a tank for?

Mr. BIGGERS. The Army had some experience in manufacturing tanks at the Rock Island Arsenal, but their experience was limited, and I should judge that their price would be a good deal higher than they would expect to get on a maximum production basis such as Chrysler was prepared to give.

Mr. FULTON. Did the Army or O. P. M. examine the Chrysler figures of cost on the basis of that to reach their conclusion as to what the Chrysler profit would be?

Mr. BIGGERS. You mean after they got in operation?

Mr. FULTON. After they got the bid or suggested a negotiated contract.

Mr. BIGGERS. I should think the Army would have a perfect right to ask a contractor to show his basis of cost and his expectancy of profit. You know that the O. P. M. has no power or authority or right to negotiate contracts or to enter into the question of contract placement or contract cost or price or profit, so we don't go into those things. We concerned ourselves primarily with the adequacy of a source of supply at the outset, and latterly with every effort to try and distribute the load and the opportunities of the defense program as widely as possible.

The CHAIRMAN. We will come back to this question a minute later. You were proceeding to du Pont and one or two others.

Senator CONNALLY. May I interrupt just a moment?

Mr. BIGGERS. Yes, sir.

Senator CONNALLY. Mr. Biggers, of course, there is no vice in the O. P. M.'s giving a contract to an industry which has one of its former employees in the O. P. M. if that employee uses no undue influence on the O. P. M. and if it is the best contract; otherwise, if the membership in the O. P. M. of somebody from a certain industry was a veto on that industry's getting any business, it would be an injustice both to the industry and to the Government, so the thing that we are concerned with is not the fact that some concern got a contract, but that that contract was providently and wisely and fairly let. That is what we are trying to locate if there is anything of that kind. I am sure you are in entire agreement with that.

Mr. BIGGERS. I am in complete agreement.

Senator CONNALLY. I hold in my hand here a list of contracts.

Mr. FULTON. Total amounts, Senator?

Senator CONNALLY. Two billion, eight hundred eighty-two million, of which \$218,000,000 are construction contracts, plus nine firms with contracts totaling less than \$50,000. That is not all of them.

Mr. FULTON. Those are the contracts that were let to the companies which had representatives serving with the O. P. M., 20 percent or more of the total contracts let.

(The list referred to was marked "Exhibit No. 97" and is included in the appendix on p. 2266.)

Senator CONNALLY. This is the list furnished by the O. P. M., Joseph P. Cotton, Jr., of all contracts of \$10,000 and over to certain

companies. In that list, the total of contracts which have gone to companies who had somebody from them in the O. P. M. amounted to as much as \$2,882,000,000. As I suggested before, there is no vice in that unless the representative of that company was instrumental in turning the attention of the O. P. M. to somebody in his own company or unless the negotiation of that contract was improvidently or unwisely executed.

Now, most of these contracts are negotiated, aren't they, through the War and Navy and O. P. M. together?

Mr. BIGGERS. Well, a good many of those contracts for very special items, like a tank or a battleship or for airplane engines or airplanes themselves, are contracts that have been negotiated by the military services with the sources which they deem best qualified to make them, and, as I say, when you have 2,000 people employed in an organization like the O. P. M. and something in the neighborhood of 200 of them drawn from industry because of specialized knowledge, it is inevitable that the companies that those people were formerly associated with would get some Government business, because if we excluded them we wouldn't have any defense program.

Senator CONNALLY. Certainly. That is not what I meant awhile ago; there is no vice in that. But don't you believe that the O. P. M. and the Army and the Navy ought to adopt, even in negotiated contracts, certain standards? I suppose they have, in a way, certain standards, but what I mean is that there oughtn't to be just any arbitrary way of saying, "Well, all right, we will give you this contract and we will give you a fee of a million or two million dollars to do this work." There ought to be some sort of standard so that the people who want these contracts, knowing those standards, can fit themselves into, in somewhat comparable fashion, the old contract method where there was a competitive bid.

Mr. BIGGERS. I fully agree.

Senator CONNALLY. Have you standards over in the O. P. M. on these things, or not?

Mr. BIGGERS. The O. P. M. is divided into four main divisions at the present time: Production—

Senator CONNALLY. That is your part?

Mr. BIGGERS. Of which Mr. Batt, Mr. Harrison, and I are the leaders; Priorities, which deals with that problem which was discussed in relation to the die casting industry; Labor, which Mr. Hillman personally supervises; and Purchases, under Mr. Nelson. Mr. Nelson has accounting experts. We in the Production Division don't approve a single contract. He takes our technical adviser's judgment as to the adequacy or inadequacy of the source or the possibility of subdividing the contract or the necessity for certain machine tools or our contention that machine tools shouldn't be given this man, and he should be forced to subdivide it; he takes our judgment on those things. But as to price, as to the fairness of price in the negotiated contract, or anything of that type, Mr. Nelson has cost accountants who made a check of that item and the weight of the item and the intricacy of the item versus other items in civil life and versus other items previously procured by the Government, in order to try to determine the fairness of price in all cases, and I am assured that he does that adequately and thoroughly so that we

have a double check there on these technical items. Our department recommends or approves the Army's judgment of the adequacy of the source or sources. It doesn't pass on the fairness of a price.

Senator CONNALLY. Let me ask you, what is the chronology and the process of starting these contracts? Does the War Department or the Navy, as the case may be, first go over the supposed contract bid and tentatively agree on somebody, and then is it submitted to the O. P. M., or does it go to the O. P. M. originally and then to the War or Navy?

Mr. BIGGERS. No; it goes to the War or Navy first.

Senator CONNALLY. It is initialed there?

Mr. BIGGERS. It is initiated there, and they get their appropriations from the Congress for a specific program and they decide whom they would like to turn to for the manufacture of the bomber program, for instance. When the President initiates a bomber program and the Congress approves it, they immediately realize that they have to expand certain engine plants and build new engine plants, and they have to build new assembly plants and new parts manufactories, and they initiate a list of the people that they would turn to from their knowledge and from the surveys that the Army and Navy Munitions Board have made over the past 18 years as to the qualifications and adequacy of industries. Then they take that up with us. We are departmentized so that, for example, our Ordnance Section has five subdivisions. One of them deals with explosives, another one deals with small arms and ammunition, and another one deals with artillery and large projectiles, and another one deals with tanks, another one deals with optical instruments and fire-control apparatus. If this dealt with a small arms ammunition plant, the Ordnance Department would work out their own recommendation and would take it up with Mr. Johnson, the chief of our Ordnance Section, and his division head, who would be Mr. Chapman, formerly a vice president of Plymouth, one of the divisions of Chrysler, a man who has had a lot of experience in that type of mass production effort, and they would go over these plans, and they might say, "That looks all right to us," or they might say, "I don't think you ought to increase this company at Bridgeport or this company at New Haven because you are already congested and they have a big job. I think you ought to move it out to another location, and I think you could get so-and-so to figure on it."

Senator CONNALLY. Suppose we take another case. Suppose we take just an ordinary contract for certain materials, not the building of a plant, but so many rounds of ammunition or so many shells, or things of that kind. The Army or the Navy, as the case may be, look over the field of available contractors and decide they want to give it to a certain concern on certain terms. Now, do you also pass on those terms as well as the general proposition of distributing the production around where you think it would be most surely and quickly produced? Do you ever tell the Navy or the Army, "You are paying too much for that fee," or "You are giving too much for that product?"

Mr. BIGGERS. Yes, sir.

Senator CONNALLY. That is part of your function?

Mr. BIGGERS. It is not our obligation, but it is an opportunity we have for service, and which we exercise when it is obvious to us.

Senator CONNALLY. I commend you for that.

Mr. BIGGERS. We in the Production Department will make that comment when it is apparent to us, but the Purchasing Department makes a subsequent check and more detailed analysis, with cost accountants and otherwise, than we make, because it is not supposed to be our function to pass on price or terms, but the logic and the adequacy of the source and the location of the source and the possibility of spreading the work, the possibility of minimizing the demand on machine tools, and so forth.

Senator CONNALLY. I don't suppose you have available any reliable data or record of the cases in which the O. P. M. had turned down, as it were, the Navy and the Army on contracts and inuenced them to change the contractor or to change the construction, have you?

Mr. BIGGERS. Well, I could ge some examples, but in the main they reach us in a recommendatory state, and our men in many cases have won the confidence of the military officials by reason of their knowledge and experience of their job. They may make a suggestion to the Army as to what they think can be done, or to the Navy, and all that may be carried into effect before it ever becomes formalized, so we are not often in the position of having to veto their final recommendations.

Senator CONNALLY. What I had in mind was this, though. I wouldn't expect you to go through and try to find all those, but I think a few examples might be very helpful, because they would be very revealing as to the processes through which these contracts and other things go. The committee could grasp an example much better than they could an abstract statement of policy.

Mr. BIGGERS. Although this is still confidential, I can tell you something that happened yesterday.

Senator CONNALLY. I don't know whether it is confidential or not. We have a lot of newspapermen here.

Mr. BIGGERS. I mean it is still in the confidential state, so I could tell you an example without mentioning names, if I may, of something that happened yesterday.

Senator CONNALLY. All right. Go ahead.

Mr. BIGGERS. It was vitally necessary to get presses for the manufacture of small-arms ammunition, which is one of the critical items in our whole program. The company most logically equipped to manufacture them is located in Connecticut. They couldn't give us delivery permitting the starting of these plants before next March. Our machine-tools division——

Senator CONNALLY (interposing). You meant it required the building of a new plant?

Mr. BIGGERS. Their own limitation of facilities and expansion of their facilities and all just tied them up to that point. They were giving us everything they could, but still it would run on until then.

Our Machine Tools Section took the arbitrary position, with which the Army concurred, that they must have these plants in operation by September or October of this year, and that any presses which this company could not furnish by that date we ought to take those orders away from them and we ought to place them elsewhere. The Army didn't at first know where to place them. An effort was made, and plants were found out West—three very small plants.

The CHAIRMAN. I am glad to hear that.

Senator CONNALLY. That is what I had in mind, some example that would show us how you operate.

Mr. BIGGERS. In this particular case, these three companies were very small, and they had to get R. F. C. loans to finance their working capital, because the orders for these presses were big in relation to their net worth. They employed a very competent engineering firm to act for the three companies on the whole question of design, and production supervision, and subcontracting. They agreed to pay this engineering company a stipulated percentage. The percentage was deemed equitable by the War Department and by the Inspector General's Department.

But at the time it was contemplated, there were 43 presses to be ordered. The order eventually expanded to 120 presses. As the result of study between the R. F. C. and ourselves, we concluded that a fee which was fair, a percentage which was fair, on all the work involved on 43 presses might be high when it was applied to 120 presses.

Senator CONNALLY. Exactly.

Mr. BIGGERS. And we therefore sent one of our men out into the field and investigated exactly what service this organization was performing, and recommended to this engineering company that they reduce their fee 50 percent in view of the increased volume, and they did so voluntarily only yesterday.

That is a case where the War Department did what they thought was perfectly fair, and it possibly was fair, but we thought, in the light of the expanded order, that a reduction was reasonable. And it was a matter of considerable thousands of saving to the Government involved. But that is just one instance that I happened to think of because it occurred yesterday.

The CHAIRMAN. You say these three small companies were financed by the R. F. C. or the Government. All the big companies have been financed by the Government, too, in their expansion program.

Mr. BIGGERS. Not all of them.

The CHAIRMAN. The majority of them.

Mr. BIGGERS. Most of them. If they are building specific facilities for specific purposes, they turn to Government for financing in large measure.

The CHAIRMAN. There wasn't anything out of the way to finance a little company.

Mr. BIGGERS. Oh, no; but in this particular case, Senator, these companies had to receive working capital, though.

The CHAIRMAN. Operating money.

Mr. BIGGERS. They didn't have to build new facilities. They had the equipment to make the stuff, but they needed capital to buy materials, and it was for that that they turned to R. F. C.

Senator CONNALLY. That was a safe loan, because it was a Government contract, and they would get the money back through Government channels.

Mr. BIGGERS. It was a perfectly safe loan.

Senator CONNALLY. If you could have some of your men look up just two or three other examples of a different character, I think it would be very revealing.

Mr. BIGGERS. I didn't mean to get into personalities here, but when you speak of the benefit that a man may gain from his association with O. P. M., I really think that in a great many cases it works exactly the opposite way.

Senator CONNALLY. They lean back.

Mr. BIGGERS. If a man is here, he feels an obligation to the Government which precludes his doing for his company or his industry the things that he would normally do. I know that in my own personal case if I hadn't been down here working for the Government, I would 9 months ago have foreseen the curtailment of the automobile industry and the eventual curtailment of building and how that was going to affect a glass company which makes plate glass and window glass and automobile safety glass. I would have devoted my energies to trying to turn the resources of our company and the talents of our company—the engineering talent and managerial talent and the labor—to doing something else. But being here, I felt that I was precluded from permitting my company to seek such opportunities, and today I am faced with the fact that our company's business is declining, and our labor and our organization faces this problem of readjustment, and I wonder whether I have in any degree neglected their interests by reason of my feeling that I couldn't give thought to their interests so long as I was in the Government.

The CHAIRMAN. It was indicated here on this witness stand the other day, Mr. Biggers, that you had some influence with the Willys-Overland in their obtaining a 16,000-car contract for small cars for the Army.¹ Was there any truth in that?

Mr. BIGGERS. No, sir.

The CHAIRMAN. What were the facts in connection with that?

Senator CONNALLY. Before you pass on, I want to congratulate you, Mr. Biggers, on your statement of a moment ago. I can readily see that you could have anticipated the reduction of automobiles. I imagine a large part of your output goes into automobile glass and things of that kind.

Mr. BIGGERS. A very large part of it.

Senator CONNALLY. Naturally, if your output should fall in that respect, you would have, as an executive back home, to be laying plans to divert that loss of activity into some other channel, possibly into war contracts. I congratulate you.

Mr. BIGGERS. I have seen other companies, fine companies—I have seen the Coca-Cola Co. asked by the Ordnance Department to operate a loading plant. Likewise the Procter & Gamble Co. and many other similar situations. They are perfectly capable of doing it. It is foreign to their field of business, but no more foreign than it would have been to the field of my company, but I only mentioned that because I know that other people have had to act or felt that they had to act similarly against their own personal interest so long as they were in the Government service.

Senator CONNALLY. Did the O. P. M. pass on the Coca-Cola Co.'s contract?

¹ See testimony of Francis H. Fenn, *supra*, p. 1974 et seq.

Mr. BIGGERS. They have to clear all contracts of that magnitude; so, therefore, they did.

Senator CONNALLY. Now, the Coca-Cola Co. was selected rather on the abstract theory that it was a great business concern, and therefore had a fine organization to turn over to the shell-loading plants, although it hadn't loaded anything but pop bottles up to that time. And that is the case with, for instance, a shell-loading plant down in my State, Texarkana, Tex. A contract for operating it is going to be let, I understand, to Goodrich Rubber Co.; not that they know anything about loading shells, but that they have a big, expert organization, and that they could turn over and run this plant. That is the theory of it, isn't it?

Mr. BIGGERS. Yes, sir; and my only point is that a score of companies, such as our own, have an equally competent managerial and technical organization that they could turn over to those problems foreign to their field; but as long as I or a dozen or 50 other people are in the Government service, we just can't permit our companies to seek such opportunities. We don't have to seek it for them. I haven't even permitted them to do it. I can't feel that I should, and I feel that other people are debarred in the same manner.

Therefore, when I hear erroneous statements made or implications that the officials of O. P. M. have used their power to their benefit, I am really sure that the contrary is true in 90 percent of the cases, and I don't know of any cases where influence has been used. I don't know of a single one. If you have any instances that look questionable, I know we would be happy to investigate them and report fully.

Senator CONNALLY. At the beginning, I stated in my question that I was not accusing, that these rumors were going around, and that I thought it would be to the advantage of O. P. M. itself to make a showing. I have no particular incident that I can put my finger on and say, "Here is a case."

Mr. BIGGERS. If there are any instances of that kind in the record of the committee or that have come before the committee, I think we would welcome the opportunity to investigate them and report specifically.

COMPETITIVE BIDDING AND AWARDING OF CONTRACT FOR ARMY "JEEP" CARS

The CHAIRMAN. I am giving you a chance now to tell the record about this Willys-Overland deal.

Mr. BIGGERS. All right, sir. You mean on this quarter-ton command reconnaissance car?

The CHAIRMAN. The little "jeep" car that Bantam Co. testified to here the other day.

Mr. BIGGERS. The facts on that are—I read the testimony, Mr. Senator, because my name was mentioned in it, and it was drawn to my attention. So, I read over the testimony, and am fairly familiar with it. I will be glad to state the facts as I know them.

In the first place, there was a statement made by a member of the committee to the Bantam president that "If you hadn't had a fight with O. P. M."—

The CHAIRMAN (interposing). I made that statement.

Mr. BIGGERS. "you might not have had trouble getting this contract," so I would like to go clear back of that, to the beginning, if I may, because I know of no fight that they had with O. P. M. or that O. P. M. had with them. Shortly after I came down here—

Senator CONNALLY (interposing). Well, Mr. Biggers, the lawyer that loses his case always cusses the court privately. They lost the contract, and they were cussing you about it.

Mr. BIGGERS. I don't blame them for feeling badly about it, because they did quite an important pioneering job, and the facts are that very shortly after I was called to Washington by Mr. Knudsen—I was his deputy—and in addition to that he assigned to me the responsibility for tanks and trucks and tractors, so this came directly to my notice.

The Bantam Co. and the Willys-Overland Co.—the latter happens to be a Toledo Company, and that happens to be my home town; that is the only possible connection, because I have never had any interest in the company whatsoever—both figured on a 70-car contract for the initial test production of these jobs.

The CHAIRMAN. This car in its original state had been developed by the Bantam Co.

Mr. BIGGERS. There had been a pilot model developed by the Bantam, and some substantial changes were made in that, I am informed, by the Quartermaster Corps at Holabird and by the using services, and then they asked to have 70 built for field tests.

The CHAIRMAN. That is right.

Mr. BIGGERS. And when that was put out, the proffer was sent out to 135 companies, but the only two that bid, according to my recollection, were Bantam and Willys-Overland. Willys-Overland was \$250 low per car, but Bantam offered a more favorable delivery date and received the contract, properly.

Senator CONNALLY. You mean at the advance price, but because of early delivery?

Mr. BIGGERS. Because of early delivery date. Bantam was a little bit more resourceful in the way in which they made their bid, but resourcefulness is a part of salesmanship, so I don't question that. They agreed to deliver their car within 70 days of the completion of tests of the test model, and Willys-Overland said they couldn't deliver for 120 days because the axles on which both depended would not be available from an independent source until 96 days. Well, Bantam were wise enough to know that a certain amount of time would be consumed in this testing, and they practically came within—

The CHAIRMAN (interposing). The reason they knew was that they tested out the original car and got it to the point where they had this order, and they knew how much time it took to test. Willys-Overland hadn't done that.

Mr. BIGGERS. They knew that the Army would probably take up some further time. But, anyway, they came within a few days of meeting their delivery specifications, and they got the contract.

My first knowledge of it was when their representative came to us with a pretty serious financial problem. They were indebted to the R. F. C. and were in default to the R. F. C. on both the principal and the interest of their obligations, and they had to work out some

solution of their financial problem with the R. F. C. before they could go ahead with this contract which they had succeeded in getting from the War Department.

Believing that they were entitled to support, I wrote to the R. F. C. on August 5, 1940, and recommended that the additional assistance be given them, and that their obligations be frozen until they had time to make this contract and reap the proceeds of the order. I only mention that because there was an inference the other day in the testimony that O. P. M. or I individually had been antagonistic to Bantam, which is not true.

Senator CONNALLY. Do you want to put that letter in the record or not?

Mr. BIGGERS. I will be very glad to.

Senator CONNALLY. If you like, I think it ought to go in the record.

(The letter referred to was marked "Exhibit No. 98" and is included in the appendix on p. 2267.)

Mr. BIGGERS. Subsequently, after these 70 cars had been delivered and were satisfactory, the Quartermaster Corps had planned to buy 1,500 cars for a more extended test, and had been negotiating with Ford and Willys-Overland and Bantam, with the expectancy of dividing that 1,500 cars between all three in order to have three models, three sources of supply, subject to the field test.

The Bantam representatives persuaded the using services—the Infantry and the Cavalry, for example—that it was in the interest of promptness and to the Government's interest to place the whole order with Bantam, a perfectly proper thing for them to attempt to do. The Quartermaster Corps didn't agree with that recommendation and demurred. They made their recommendation to The Adjutant General, who overruled them. Then they came with the proposition to the Defense Commission. Mr. Knudsen and I reviewed it and we agreed with the Quartermaster Corps, not that the Bantam Co. was too weak and small to handle that order, which was part of the testimony of the other day—I never made that statement nor held that view—but we did insist that it was advisable for the military services to have at least two sources of supply qualified to make every important vehicle in the event of an emergency, because the demands might overnight expand far beyond the demands of the present, or at least the demands of last summer and fall. We had taken that position in relation to trucks, as standard a thing as a truck, and this is interesting because Chevrolet had, in competitive bids, become the supplier of the 1½-ton truck to the Quartermaster Corps, and General Motors truck division, Yellow Coach, had become the supplier of the 2½-ton vehicle, all on competitive bids. The Quartermaster Corps, in the interest of standardization and the simplification of the maintenance and service problems in the field, recommended that, by negotiated contract, all future orders be given to the present suppliers at prices compatible with those, equal or lower than those, obtained through open bidding.

Mr. Knudsen took the position, with which I concurred, that that was not wise; that they ought to have a second source of supply capable of making each of these vehicles, and he ruled to that extent against the interests of the General Motors Corporation, with which he had been previously associated, because he thought it was right.

The Quartermaster Corps raised the whole problem of service and standardization, and we had a meeting with General Marshall on that subject, and he concurred in our judgment that they could have a divisional standardization that would partially answer their problem and still have the two or more sources of supply.

Senator CONNALLY. Of course, your theory was that the Government ought not to be dependent upon a single plant.

Mr. BIGGERS. In event of war.

Senator CONNALLY. In any event, to get the stuff.

Mr. BIGGERS. Well, any one of these plants could take care of their requirements as of that time, but we didn't know how fast they would be expanded.

Senator CONNALLY. Exactly.

Mr. BIGGERS. In the event of hostilities, we didn't know whether one plant might be knocked out of commission by sabotage or something else.

Senator CONNALLY. A sort of stand-by plant, in other words.

Mr. BIGGERS. We wanted to have at least two sources of supply capable of making the product, experienced in making the product, and we so recommended.

Now, then, after having gone through all that question of policy on trucks, along came this little vehicle, the quarter ton, which is merely a quarter-ton truck, four-wheel drive, the same as the larger vehicles are. The Adjutant General recommended that it all be placed with one company.

Senator CONNALLY. What?

Mr. BIGGERS. The Adjutant General, speaking for the General Staff, recommended that it all be placed with one company. The Quartermaster Corps demurred.

The CHAIRMAN. They wanted to place it with Ford, didn't they?

Mr. BIGGERS. At that time they wanted to place it with Bantam. That was the 1,500.

The CHAIRMAN. That was the first 1,500 placed with Bantam?

Mr. BIGGERS. That is right. We went into it and agreed with the Quartermaster Corps that division between at least two sources was desirable. We didn't recommend which two. We took our views to the Deputy Chief of Staff and explained them. We didn't argue for any company. We argued merely for Bantam and one other, not for two others. The Deputy Chief of Staff ruled that 1,500 vehicles would be placed with each of the three and that the Army would buy 4,500 instead of the 1,500 they previously contemplated buying. We expressed no opinion on quantities.

Mr. Knudsen O. K.'d the order for Bantam, on my recommendation, for the first 1,500; and confirming our understanding with the Deputy Chief of Staff, with Mr. Knudsen's approval, I wrote to the Quartermaster General confirming the arrangement, that this order would be placed with Bantam, and the two other orders, by direction of the Deputy Chief of Staff, would be placed with these other two companies on a negotiated bid and comparable price basis, and that the supply of axles which would be dependent upon for all three should, if possible, be divided equitably between them.

Incidentally, Ford facilitated deliveries by being drawn into that picture, because Ford loaned machine-tool equipment to the Spicer

Manufacturing Co., who made the axles, and as a result of that loan, axle production was expedited; and, according to my recollection, of the three producers, Ford was the first one to complete. I know that is a fact. Each was assured a 1,500-car order. Ford was the first one to complete deliveries; Bantam, second; and Willys, a delayed third, because Willys had a problem that had to be worked out between the Quartermaster Corps and the using services as to weight. Willys used a somewhat larger engine, a more powerful engine, which added weight to their vehicle. The Quartermaster Corps thought the more powerful vehicle was preferable. The using services demurred. There was quite a controversy. The using services wanted a vehicle that didn't weigh over 1,300 pounds, because this was a substitute for a motorcycle with a side car, but the Quartermaster Corps, from their experience with motor transport, knew that that weight of vehicle wouldn't stand up to Army requirements, so they finally all ended up by making a vehicle of around 2,100 pounds.

But as a result of that controversy over weights and power, Willys-Overland didn't go into production and didn't get their clearance until something like the 7th of June, and they only completed their first 1,500 within the last couple of weeks.

So all three have produced vehicles, and all three vehicles are deemed acceptable by the using services and by the procurement services of the Army.

Very recently the Army wanted to buy 16,000 of these vehicles, and the Quartermaster Corps wanted to buy them by negotiated contract from Ford, because they believed that Ford was the most dependable source of supply and could give them the best assurance of delivery. We in O. P. M.—and that includes Mr. Knudsen and Mr. Hillman and Donald Nelson and myself—after going over this with the Under Secretary of War, reached an agreement, in which he concurred, that it was contrary to public policy to give that business to Ford if there were two other potential and, in our judgment, qualified producers, one of whom had in large measure originated the vehicle. We thought it was wrong to shut them out from bidding by a negotiated contract to a big producer who was already serving the Government and fulfilling contracts in many other fields. So the net result was that they said, "What is the alternative?"

We said, "There are two alternatives. One, that you design a standard vehicle, such as the personnel carrier of the Ordnance Department, on which all three could bid."

The General Staff had insisted that these 16,000 vehicles be all identical, not from different models; so we said the only other alternative was that they should ask for bids and award the contract to the lowest bidder. They said they didn't have time to work out a standardized vehicle on which all three could bid, using this component, this engine, and that axle, and this transfer case, and that transmission—that they didn't have time for that; so they asked for bids.

Of the three producers, of the three companies that had had experience in making this vehicle, Willys-Overland was the low bidder by \$640,000 on a \$14,000,000 contract. A question arose in that the War Department still felt that it should be given to Ford in spite

of that difference, because of their confidence in Ford's ability to deliver.

I refused to have anything to do with the award and wasn't even acquainted with the prices until afterward, because Willys-Overland, being a Toledo company, I wanted no part in the discussion.

Senator CONNALLY. You weren't interested in the company, and the fact that it was in Toledo is a mere geographical—

Mr. BIGGERS (interposing). I know. I think I probably leaned backward too far.

Senator CONNALLY. You did. You probably bumped your head when you leaned back.

Mr. BIGGERS. Mr. Knudsen decided the question, and when the War Department recommended the award of this contract to Ford at a \$640,000 premium cost to the Government, Mr. Knudsen refused to approve it. He said that in his judgment as an automobile manufacturer, the low bidder was a competent source of supply for that number of vehicles, and he wouldn't reject the low bid.

Senator CONNALLY. What finally happened?

Mr. BIGGERS. The contract went to Willys-Overland.

The CHAIRMAN. The R. F. C. financed it, didn't it?

Mr. BIGGERS. The R. F. C. will loan, presumably—I don't know that they have made any commitment—working capital to Willys-Overland for this venture, just as they did to Willys-Overland and Bantam in their previous manufacturing operation. Both Bantam and Willys-Overland are indebted to the R. F. C. on first-mortgage loans.

The CHAIRMAN. Have you any statement from the R. F. C. on the Willys-Overland Co.?

Mr. BIGGERS. Yes. After this question arose, I asked Mr. Jones for a statement of his financial relations with both companies, both Bantam and Willys-Overland, and, Mr. Chairman, I have letters from him.

Senator CONNALLY. If you care to, we will put them in the record.

Mr. BIGGERS. I will be very glad to, because they are a matter of information to the committee, I should think.

(The letters referred to were marked "Exhibits Nos. 99 and 100" and are included in the appendix on p. 2268.)

Mr. BIGGERS. Now, the committee had a wrong impression, at least according to this testimony, as is stated here by Senator Mead, who is not present today, and I would like to correct that impression. [Reading:]

Now we have another witness—

Senator CONNALLY (interposing). Are you quoting Senator Mead?

Mr. BIGGERS. I am quoting Senator Mead.

Senator CONNALLY. Then let the record show that you are quoting.

Mr. BIGGERS (reading):

Now we have another witness who tells us (and this is evidently true, too) that in order to get a certain design it is absolutely necessary to put one completely out of business, with its plant, its machinery, and its skilled workers, and allow another company, which has been enjoying the inertia of bankruptcy and with cobwebs and rust around the plant and machines, to go to the Government and get a loan of \$3,000,000, so that the Government actually is going into the business of putting a pioneering company completely out of business.¹

¹ See *supra*, p. 1990.

The CHAIRMAN. That was the impression this committee had. That is exactly right.

Senator CONNALLY. I wasn't here, Mr. Biggers. I didn't get such an impression, because I wasn't here.

Mr. BIGGERS. The facts are that the Willys-Overland first-mortgage loan was made by R. F. C. a long time ago, and it was not a \$3,000,000 but a 2½ million dollar loan, which, according to Mr. Jones, has been reduced to \$2,088,000.

Senator CONNALLY. You mean that was made before this?

Mr. BIGGERS. Long before this came up.

Mr. FULTON. I think, though, that the R. F. C. informed the committee that the indebtedness of the Willys-Overland was something over \$3,000,000 as of last week.

Mr. BIGGERS. It is quite possible that they have a mortgage loan plus their working capital loan, the same as the Bantam Co. has a mortgage loan plus a working capital loan.

Mr. Jones, in the concluding sentence of his letter, voluntarily made the statement: "We regard this company as sound and the management capable,"¹ speaking of Willys-Overland.

I just thought it was an erroneous impression to speak of their cobweb- and rust-coated factory, because they have been an operating company, manufacturing motorcars, and are manufacturing motorcars today in addition to the other contracts of a minor nature which they are making for the Government in the defense program.

Now, Bantam and Willys-Overland had both been through financial difficulties. They had both been through receivership, and they both eventually appealed to R. F. C. for first-mortgage loan.

Senator CONNALLY. Whether they had cobwebs in the factory or not, if they could make the cars and if they could make them more cheaply than anybody else and the Government needed them, why shouldn't they wipe out the cobwebs and go to work and do it? I don't see any reason.

The CHAIRMAN. What impressed us was that you had been very careful to divide the first 1,500 three ways, and we couldn't see why the 16,000 couldn't be divided the same way so as to keep the Bantam Co. running, since they had done all the pioneering in the beginning to make the car available for the Army's use.

Mr. BIGGERS. Mr. Chairman, that would have been my preference.

The CHAIRMAN. It seems to me that that is what should have been done.

Mr. BIGGERS. My preference would have been that the Army take time to design a standard vehicle and let two or more of these companies continue to supply it. They said that time didn't permit and that the bid method was chosen and the contract was awarded to the low bidder. I had no part in recommending the award, but I think that Mr. Knudsen's judgment as to the competence of an automobile company to make 16,000 vehicles is certainly dependable judgment.

The CHAIRMAN. I wouldn't doubt that.

Senator CONNALLY. He has had some experience, hasn't he?

Mr. BIGGERS. He has had some experience.

¹ See Exhibit No. 99, appendix, p. 2268.

PROCEDURE FOLLOWED IN ALLOCATING DEFENSE CONTRACTS

Senator CONNALLY. Mr. Biggers, Mr. Stettinius is not connected with the letting of contracts, is he, or not?

Mr. BIGGERS. No, sir; he is in charge of the Priorities Division.

Senator CONNALLY. Priorities. I notice in this compilation of contracts let that United States Steel obtained large contracts, which is, of course, easily understood, because it is the largest steel producer, and steel goes into practically every defense contract. Almost every defense contract has some steel in it. But Mr. Stettinius has no direct connection with any letting of contracts?

Mr. BIGGERS. Not only that, but he resigned his position and gave up his salary from United States Steel Corporation, so he has no connection either with the letting of contracts or with the Steel Corporation at the present time.

Senator CONNALLY. Of course, I suppose he is still a stockholder. I don't know about that.

Mr. BIGGERS. I don't know about that, either, sir.

Senator CONNALLY. As a matter of fact, in the operation of the priorities, I suppose that works in a way that no particular company would be concerned, so that simply the contractor or whoever gets the priority can get his steel anywhere he wants to, can't he?

Mr. BIGGERS. Yes, sir.

Senator CONNALLY. So he is under no compulsion or pressure to buy from United States Steel unless they can sell it to him more cheaply. Is that right?

Mr. BIGGERS. Yes, sir. The manufacturer of tanks gets an A-1-D priority, and he can get his steel for any purpose—his armor plate or anything else—wherever he chooses, and he can use that priority to get the best deliveries he can.

Senator CONNALLY. I see.

Mr. BIGGERS. From any source he chooses.

Senator CONNALLY. That is right.

Mr. Biggers, have you any observations—I don't care to press you on it—as to the merits of the different processes of letting contracts—the negotiated contract with a fixed fee, or the old system of letting contracts on competitive bids, and so on? I don't care to press you on that, but do you think the old system of letting contracts on competitive bids was entirely practical and feasible in this emergency, or do you think the better method is the negotiated contract with a fixed fee?

Mr. BIGGERS. Well, generally speaking, I think that the bid basis should be followed wherever it is possible and practicable, that it is in harmony with our American customs and our American traditions to give a free opportunity to everyone, an equal opportunity to everyone, who is qualified to bid on a job.

Now, all this has been modified very constructively, because, in the first place, the contracts are now arranged so that when the Army puts out a very large proposal on something like blankets, we will say, or tents, or beds, or refrigerators, or something of a standard or semi-standard nature, they usually provide that no more than a certain percentage of the total award shall go to any one company. Then we have succeeded in getting—

Senator CONNALLY. I realize that, because in the matter of cotton mattresses, which my State produced in very large volume before the emergency and which we are prepared to deliver in large quantities now, they adopted a rule that they wouldn't take the low bid in every case. My contractors submitted the lowest bids of any place in the United States, and yet, in order to distribute the business, they provided that no one contractor could get over 50,000 mattresses at any one time, and as a result, they are paying more for mattresses produced up around Chicago and some other areas than they could buy those same mattresses for in my State, because they want to disperse these contracts around over a large territory. Of course, we don't make any tanks, but we thought we ought to be allowed to make the things that we could make, and if we could make them more cheaply than somebody else, that we ought to be allowed to do that. But they adopted a policy that curtails our activity. We want to contribute to the ease and comfort of the Army and the Navy and the people of the United States by giving them the best mattresses.

Mr. BIGGERS. Well, I presume their regulation allows them to place several contracts in the State.

Senator CONNALLY. Oh, yes.

Mr. BIGGERS. Providing no more than a certain percentage is placed with any one producer.

Senator CONNALLY. That is true; any one producer.

Mr. BIGGERS. And it may work hardships in some instances, such as that, but the net result has been to spread the volume more widely and to give the smaller operator a chance to figure in at a low and unfavorable price on a small quantity, and they have also eliminated the provision that prices are based upon delivery to certain central points and have made prices in many cases an f. o. b. price.

REORGANIZATION OF DEFENSE CONTRACT SERVICE TO ASSIST SMALL BUSINESS

The CHAIRMAN. I notice here by the press this morning that you have changed over the Small Business Section of O. P. M. What effect is that going to have on the small fellow getting more business?

Mr. BIGGERS. I hope it is going to be a beneficial effect, sir.

The CHAIRMAN. What I would like to know is why something like that wasn't done 6 months ago, if it is going to get results?

Senator CONNALLY. Since it wasn't done 6 months ago, it is good to do it now if it will have that effect, isn't it?

Mr. BIGGERS. These things are all a little bit evolutionary. I think it is; yes.

Senator CONNALLY. You were a new outfit when you came down here; you had to build it up and learn a little as you went along. I hope you have learned a lot.

Mr. BIGGERS. I hope we have. Here is what happened.

The CHAIRMAN. I am very much interested in that because this is what we have been working on for the last 6 months.

Mr. BIGGERS. This started in as a small businessman's activity under the Purchasing Coordinator in the Defense Commission, and then it was put under the Production Division in O. P. M., under our Division, because it was deemed to be most logical there because the major rela-

tionships, major problems, were between the contractor and the subcontractor rather than between a contractor and the Government. That is the major opportunity of the small producer.

Well, I reached the conclusion—and I think it is fair to say I was assisted in doing it by the thought that your committee has given to this problem and by some of the facts that you have brought out regarding the importance of maximum distribution¹—and I recommended to the O. P. M. that this Defense Contract Service be elevated in stature and importance so that it would be a primary function of the O. P. M. and not a divisional responsibility, so that it would report directly to Mr. Knudsen and Mr. Hillman, and that all divisions of O. P. M. would have a common interest in it and that it wouldn't be localized as the responsibility of one division.

The CHAIRMAN. I hope you get somewhere with it. Maybe we will get some contracts for some of these small contractors.

Mr. BIGGERS. Now, the net result of that is that Mr. Knudsen and Mr. Hillman have delegated—I haven't seen this article. Does it mention—

The CHAIRMAN (interposing). It says that "William E. Lewis, president of the Owens"—

Mr. BIGGERS (interposing). Levis, L-e-v-i-s.

The CHAIRMAN. It is spelled "Lewis" here—

will head the reorganized Defense Contract Service in the Office of Production Management, it was learned yesterday in a sweeping move to encourage subcontracting of defense production as a means for alleviating unemployment resulting from priorities.

That is the subject we are discussing now.

Mr. BIGGERS. Mr. Levis is a man whom I have known for years, a man who has a great deal of ability in industry, and particularly in difficult promotional jobs such as this, and he was working at my request with the Defense Contract Service, of which Mr. Mehornay is chief, and Mr. Knudsen and Mr. Hillman have appointed him, also at our recommendation, as their direct agent or channel of authority from them to the Defense Contract Service, of which Mr. Mehornay continues as chief. But Mr. Levis will be the supervising or guiding head, working under the direction of the Director General and Associate Director General, and he and Mr. Mehornay, with the backing of the O. P. M. council—

The CHAIRMAN (interposing). What change in policy will that cause? Will that probably wake up the Army and the Navy to the point where they will go to work and arrange things so that the small man can have an opportunity to get some of this business?

Mr. BIGGERS. I was just starting to say that Levis and Mehornay and Prof. Douglas Brown, of Mr. Hillman's division, have done an excellent job of working out a program with the Army and the Navy, with the backing of the O. P. M. council. That has now been informally approved and will very shortly be announced by the military services and will undoubtedly facilitate just exactly what you have been driving for and what we have been working on. I wish it might have come months ago, but, as Senator Connally said, these things are somewhat evolutionary, and you can't build Rome in a day.

¹ See Hearings, Part 6, for discussion of small business in the defense program.

The CHAIRMAN. We are inclined to be impatient because we have been working on this thing and pounding on it and trying to get some action, and if the O. P. M. has finally come to the point of action, I am very happy over it.

Mr. BIGGERS. I am, too, Senator.

The CHAIRMAN. I hope it gets results.

Mr. BIGGERS. I really think it will.

The CHAIRMAN. Because, as the gentleman who testified here first said, if there are five or six thousand firms on the point of going out of business as a result of priorities,¹ we have certainly got to find some way to get them priorities, and the only way to get them priorities is to get them defense contracts on a basis that they can handle, just as you handled the three small companies you were telling about the R. F. C. financing for the purpose of those machines.

Mr. BIGGERS. I think the gentleman who spoke on the die-casting situation, mentioned 125 die casters who sell to 5,000 other companies.¹

The CHAIRMAN. That is right.

Mr. BIGGERS. He has a very critical situation and one that is typical of others. As he said, his industry has done a great deal in facilitating mass production and eliminating difficult machine operations. Now, their property, their facilities, their die-casting technic is going to be used largely and effectively in the defense program, but the difficulty, as he indicated, is in bridging them over during the transition from civilian production to defense production, and it's going to be hard on the companies during that transition period. I mean I think the great majority of them will survive, but it is going to be difficult for them to hold their working organizations, and I don't blame them for being disturbed about it, and everything should be done to help them because they can be a very vital factor in defense, just as they have been in civilian industries.

Senator CONNALLY. I assume that this new agency that you set up here for small businessmen——

Mr. BIGGERS (interposing). It is just an expansion of the possibility of the existing agency.

Senator CONNALLY. I assume that this service, since it is set up for the benefit of the small manufacturer, will of course analyze the existing situation and have some agency of information there that a small contractor could come to find out who the big concerns are that have got particular kinds of contracts and make his contacts with a view to getting subcontracts. I assume that that would naturally follow.

Mr. BIGGERS. It does, sir. The organization already has 36 district offices in every one of the Federal Reserve and branch bank cities, and it has 392 people in its field organization, trying to perform that service and performing it within limitations. As I testified——

Senator CONNALLY (interposing). Does the central office here contact these suboffices regarding these contracts?

Mr. BIGGERS. Oh, yes; at all times.

Senator CONNALLY. So that a small manufacturer or a small contractor could go to one of these offices and get this information and know where to apply for his subcontract.

¹ Supra, p. 2053, et seq.

Mr. BIGGERS. Yes, sir; but these directives that have been worked out and that I think will very shortly be promulgated by the War and Navy Departments, will clarify the procedure and will make possible of accomplishment a great deal more than has been possible to date, and I think that the efforts of this committee have been very constructive in helping to bring that about.

The CHAIRMAN. Thank you, Mr. Biggers. We have tried our best.

Senator CONNALLY. We are very much obliged for that. I want to congratulate you and say that you have made a very fine appearance here today.

Mr. BIGGERS. I don't know about the appearance, sir.

Senator CONNALLY. Well, you have opened up and informed us on certain things, and I think you have done a good job of clarifying the atmosphere about all these rumors and so on. If you will furnish two or three more examples of what you said, I think it would be very helpful, because this committee is not here on a witch hunt. We are not trying to put the O. P. M. in a hole——

Mr. BIGGERS (interposing). I know you are not.

Senator CONNALLY. But we do want to help the O. P. M. where we can by constructive criticism and get this program to going.

Mr. BIGGERS. Certainly.

Senator CONNALLY. I am hopeful that the O. P. M. and War and Navy Departments can so integrate themselves through their cooperative efforts, to speed this thing up, because, in the nature of things, the more agencies a contract has to clear, the more time is going to be consumed in getting things going.

Mr. BIGGERS. Yes, sir.

Senator CONNALLY. Yes; I appreciate your testimony very much, Mr. Biggers. I know the glass business is a very fine business, because we had some investigations of the glass business in the United States in the Finance Committee, when we had the tax and tariff bills up. Of course, when the tariff was up, they said how hard their sledding was and that they couldn't get along without a high tariff, but I have been inclined to believe that they have been a very efficient organization all the time.

Mr. BIGGERS. It might possibly have been some other company, sir.

Senator CONNALLY. Possibly so.

The CHAIRMAN. The committee will recess until a call by the chairman. We appreciate Mr. Batt's coming down here and are sorry to have kept him all morning. We will have to postpone his questioning until a future date when the chairman will call the committee.

(Whereupon, at 12:25 p. m., the committee adjourned, subject to the call of the Chair.) ¹

¹ Hearings held in Los Angeles, Calif., on August 19, 21, and 22, 1941, appear in Hearings, Part 6.

INVESTIGATION OF NATIONAL DEFENSE PROGRAM

MONDAY, AUGUST 25, 1941

UNITED STATES SENATE,
SPECIAL COMMITTEE INVESTIGATING
THE NATIONAL DEFENSE PROGRAM,
Seattle, Wash.

The committee met at 10:17 a. m. pursuant to adjournment on Friday, August 22, 1941, at Los Angeles, Calif., in courtroom No. 4, United States Courthouse, Senator Harry S. Truman presiding.

Present: Senators Harry S. Truman (chairman), James M. Mead, and Mon C. Wallgren.

Present also: Hugh A. Fulton, chief counsel; Charles P. Clark, associate chief counsel.

The CHAIRMAN. Mr. Byrne, will you be sworn?

Do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. BYRNE. I do.

TESTIMONY OF JOHN C. BYRNE, CHIEF ENGINEER, CALIFORNIA SHIPBUILDING CORPORATION, LOS ANGELES, CALIF.

EFFECT OF STEEL DELIVERIES ON PACIFIC COAST SHIPBUILDING PROGRAM

The CHAIRMAN. Have that seat, Mr. Byrne, and give your name, connections, and background to the reporter, please.

Mr. BYRNE. John C. Byrne. I am chief engineer of California Shipbuilding Corporation, Los Angeles.

Mr. FULTON. Will you talk more distinctly so that all the people can hear you?

Mr. BYRNE. I was requested to be present here to give you the status of steel deliveries for ships being constructed by the California Shipbuilding Corporation, Richmond Shipbuilding Corporation, Todd-California Shipbuilding Corporation, and Oregon Shipbuilding Corporation.

The CHAIRMAN. Will you give us those figures? What is the situation with regard to steel delivery as it affects the construction of these ships?

Mr. BYRNE. With respect to deliveries of steel at Los Angeles, we are considerably behind on deliveries of steel. We should, as of this date, have approximately 45,000 tons of steel in our yard, whereas we have only 30,000 tons.

Mr. FULTON. What is the effect of that?

Mr. BYRNE. The effect of that is that we have not laid a keel for 4 weeks, because we did not have the proper steel with which to start the ways.

Senator MEAD. How many keels would you have laid in the 4 weeks, if you had it?

Mr. BYRNE. We are laying one keel a week. We have six idle ways at the present time.

Senator MEAD. Here?

Mr. BYRNE. That is at Los Angeles. We have six idle ways there.

Mr. FULTON. How many men would you ordinarily have employed if you had had that steel to carry on the program as arranged?

Mr. BYRNE. We would have built our labor load up approximately 3,000 men more by this time had we had steel to go ahead with our program.

Mr. FULTON. That is in Los Angeles alone?

Mr. BYRNE. That is in Los Angeles alone.

Mr. FULTON. What is the situation in Portland?

Mr. BYRNE. The situation in Portland is similar to that. They are supposed to have had, on August 1, 32,000 tons of steel, but have only received 23,000 tons of steel. They have at the present time three idle ways there and cannot—

The CHAIRMAN (interposing). What would that mean in employment if those three ways were not idle?

Mr. BYRNE. My judgment is they would have probably 2,000 men more on their pay roll at this time had they been able to continue to lay keels on their schedule.

The CHAIRMAN. What is the situation here?

Mr. BYRNE. The situation here at Seattle-Tacoma Shipbuilding Corporation, I understand, is entirely different. They are not receiving steel as fast as it is called for, but at the present time it is not doing them any harm.

The CHAIRMAN. That is, it is not holding up the construction program?

Mr. BYRNE. It is not holding them up.

The CHAIRMAN. As it is in other places?

Mr. BYRNE. No.

Mr. FULTON. What is the situation at Richmond?

Mr. BYRNE. At Richmond, Calif., the Todd-California Shipbuilding Corporation, which is the yard that is building the ships for the British contract, should have received as of August 25 about 22,000 tons of steel, and they have received most of that steel. The steel situation is not hurting them very much at the present time. They are short some critical items which hurts them on delivery, but they are not in the same situation as the other yard.

Now, then, the Richmond yard, which is the yard for building American boats, as of August 25 should have 13,000 tons of steel in their yard, and they have approximately 7,000 tons. Their program is much delayed on that account.

Mr. FULTON. What would that mean in employment?

Mr. BYRNE. I believe that if they had more steel they would be now employing probably 2,000 men more than they are at the present time.

The CHAIRMAN. How do you get your workers in these ship construction yards? Do you train them yourselves?

Mr. BYRNE. We have worked jointly with the Federal Government on schooling and training employees; through the local boards of education, I believe, is the way it works out. That is, the local people set up the school but it is paid for by the Government.

The CHAIRMAN. And you have enough trained workers ahead now to put these ways into production if you had the steel to put them into production?

Mr. BYRNE. Yes. We have at Los Angeles approximately 2,300 to 2,500 men in schools at the present time, and we have commitments, more or less, to employ them, and we are unable to do that at the present time because we can't use any more men effectively at this time.

The CHAIRMAN. How are these additional shipways financed for your company?

Mr. BYRNE. All the shipways have been financed by the Maritime Commission.

The CHAIRMAN. That is, the Federal Government puts up the money?

Mr. BYRNE. The Federal Government owns the plants, with the exception of the Todd-California Shipbuilding Corporation, which is owned by the British Government.

The CHAIRMAN. That is owned by the British Government?

Mr. BYRNE. That is correct.

Mr. FULTON. The Federal Government, I think our records show, spent over \$50,000,000 for building ways for these companies.

Senator MEAD. That is out here on the west coast?

Mr. FULTON. The entire program.

The CHAIRMAN. Any questions, Senator Wallgren?

Senator WALLGREN. How is your steel shipped to you on the west coast?

Mr. BYRNE. It is principally by rail, in order to expedite the program.

Senator WALLGREN. What particular type of steel are you using?

Mr. BYRNE. It is just welding quality, plates and shapes.

Senator WALLGREN. How about construction steel? Have you had any shortage in that? I am speaking of building construction.

Mr. BYRNE. We had some difficulty but it wasn't critical. That is, the buildings were delayed in going up, but I don't believe it has hurt anyone. Some of the yards, like Oregon Shipbuilding, have been having a difficult time getting Whirtey cranes, which are the big cranes that service the ways.

Senator WALLGREN. Are you anticipating at all any transportation problems, as far as rail is concerned, within the next few months?

Mr. BYRNE. We have heard that there is apt to be a shortage of cars for moving materials, but it is rumor so far as I am concerned, so far as we know.

Senator MEAD. Have you any central assignment bureau or agency to assign steel to the various shipyards? I understand in the airplane industry they have a central assignment bureau at Wright Field, and the representatives of the airplane industry go to Wright Field where they are assigned their quota of necessary materials. How do you get your materials?

Mr. BYRNE. Gibbs & Cox, who are the naval architects and agents for the Maritime Commission, made all the commitments for steel for

all of the American yards, and the yards, in turn, gave Gibbs & Cox a schedule of delivery requirements. When I speak of being short on tonnage, it is always in reference to exhibits that were filed with the Maritime Commission as to when we would require certain groups of steel, on what dates, to meet our program. So that we have had nothing to do with the purchasing of it. We now have some people in the East trying to expedite the delivery of the steel that we are supposed to be getting.

Senator MEAD. Where does your steel come from, in the East?

Mr. BYRNE. It comes from practically all of the mills. I would say the largest portion of it, however, is coming from Carnegie-Illinois.

The CHAIRMAN. At Chicago?

Mr. BYRNE. Yes.

The CHAIRMAN. South Bend?

Mr. BYRNE. Yes.

Mr. WALLGREN. Is there any particular class of steel that you are short in, that you have any trouble in obtaining delivery, that is the fabricated or the structural or just the sheet steel?

Mr. BYRNE. Well, I would say that the plates are going to be the worst trouble; that is, our trouble now is plates for the double bottoms. We don't seem to have so much trouble with the shapes. In fact, our figures are slightly misleading because, whereas California ship shows that they are within 75 percent of the tonnage which is required at this time, quite a good portion of that tonnage is not usable at this time because it may be for the shapes, that we cannot use. Also, we have quite a good bit of steel for side plating, which we cannot use because we have to put down the bottoms first. It is the bottom steel that is preventing us from laying any further keels at this time.

Senator WALLGREN. Do you know of any other factories that are having trouble in obtaining delivery in steel?

Mr. BYRNE. You mean in other businesses?

Senator WALLGREN. Yes.

Mr. BYRNE. No; I don't; not specifically. I know that everyone seems to be having difficulty getting steel for any purpose.

Senator WALLGREN. Well, that has been our testimony up and down the coast. I think that has been about what has been shown.

Mr. FULTON. What is your priority?

Mr. BYRNE. We started out on A-1-C priority. The Government asked us to expedite our shipbuilding program and said that they would give us A-1-A priority.

The CHAIRMAN. That is the highest priority?

Mr. BYRNE. That is the highest priority for those ships which were to be delivered this year. For that we have gotten an A-1-A priority.

Mr. FULTON. So, with an A-1-A priority, which is far in excess of what any civilian industry can get, you are already short enough to lessen your employment by some 7,000 men who would otherwise be employed?

Mr. BYRNE. Yes.

The CHAIRMAN. Then what must be happening to the civilians, if that is true, with A-1-A priority for the Government's first necessity? I thought we had steel capacity enough in the United States to supply the whole world. That is what the United States Steel Corporation has been telling us. What has become of all of it?

Mr. BYRNE. I don't know. I suppose this should be made clear, that we do not have an A-1-A priority beyond the ships that are being delivered this year.

The CHAIRMAN. I understand that, but you are not getting the steel, A-1-A priority or not.

Mr. BYRNE. That is correct. No matter what our priority, we are not getting the steel.

Senator WALLGREN. And present conditions would indicate that any further expansion in shipbuilding activities in the West is just out of the question, because of this shortage.

Mr. BYRNE. I don't believe that that is entirely true. I believe that one thing that has happened, and that the mills should be given some credit for, is that we started out with a program of delivering so many ships in a certain period of time. We were asked by the Government to expedite that program. We took a month and one-half off our first deliveries and 5 months off our last deliveries. That was done at a time when the mill orders had already been placed. So that there is some justification in the mills not being able to pick up that load as quickly as it had been hoped that they would.

Senator MEAD. That, you say, is due to the fact that you have raced ahead of your program?

Mr. BYRNE. That is correct.

Senator MEAD. If your program was just going along on an even keel, the chances are the steel might be here?

Mr. BYRNE. It is not all here, no; we are still behind even on our original schedule.

The CHAIRMAN. There is evidently a decided shortage in steel; it doesn't make any difference about priorities or not. There isn't enough steel to meet the situation.

Mr. BYRNE. That is correct. We talked to the mills recently, one of the mills, and they said they were operating this particular mill at 100-percent capacity, and they didn't know what we could do, unless we could get a better than A-1-A priority.

The CHAIRMAN. And that still wouldn't bring the steel out of the mill, if they didn't have the capacity to put it out?

Mr. BYRNE. That is correct.

Senator MEAD. I was wondering if the steel mills were filling orders in accordance with their schedule. For instance, you said that your last ships were gotten out 5 months ahead of time.

Mr. BYRNE. Yes.

Senator MEAD. They may have your orders all listed in accordance with your original schedule or program. I am wondering if the steel companies are producing steel for all of the industries of the United States that have preferential priority status, and if there may be a possibility of this steel going in the wrong direction right now, rather than in the direction where it is most vitally needed.

Mr. BYRNE. Well, that might be. I have no idea what percentage of tonnage these ships represent, of the mill capacity. Where the other tonnage is going, I suppose, a great deal of it is going into tanks and other things of that character, that I presume require quite substantial amounts of steel.

Mr. FULTON. But ships were ahead of tanks, as I understand, in priorities.

Mr. BYRNE. A-1-A; yes; but---

Mr. FULTON (interposing). Well, that is what you are short now, A-1-A.

Mr. BYRNE. We are partly short on A-1-A; yes.

Senator WALLGREN. Do you know whether or not the factories are making any effort to speed up the production of this sheet steel that you speak of?

Mr. BYRNE. Well, we got this kind of an answer from Carnegie-Illinois who were holding us up. They made the statement that they were meeting our original schedules for steel, and that we whacked off a month and a half at the early part of the program, and their mill was operating at 100-percent capacity, and everything that was coming out of this particular mill—that is, the Carnegie-Illinois plate mill—was all A-1-A priority, and they didn't know what they could do for us.

Senator WALLGREN. In other words, it would be impossible for them, under the present program, to speed up their production of sheet steel to you, or to anyone else?

Mr. BYRNE. That was the inference.

The CHAIRMAN. That is all. Thank you very much.

Senator Wallgren, will you call the next witness?

Senator WALLGREN, Mr. Vanderveer, have you someone here who can testify as to the natural resources?

Mr. G. F. VANDERVEER. I see Mr. Miller is here. Dr. Raver is supposed to be here. I don't know whether he is or not. I don't know him.

Senator WALLGREN. I would like to have whoever you have, who has the engineering data that you spoke to me about a couple of months ago, put this picture to the committee as to our natural resources.

Mr. VANDERVEER. Mr. Evans is here and Mr. Landahl.

The CHAIRMAN. Mr. Evans. Do you solemnly swear to tell the truth, the whole truth and nothing but the truth, so help you God?

Mr. EVANS. I do.

TESTIMONY OF GEORGE WATKIN EVANS, CONSULTING MINING-ENGINEER, SEATTLE, WASH.

NATURAL RESOURCES OF THE NORTHWEST

The CHAIRMAN. Just be seated, Mr. Evans. If you will give your full name and your connections for the record, I will appreciate it.

Mr. EVANS. George Watkin Evans, consulting mining engineer.

The CHAIRMAN. What is your residence, Mr. Evans?

Mr. EVANS. Seattle, Wash.

Senator WALLGREN. Mr. Evans, I would like to have you go ahead and explain to the committee what you know, that is from your studies, as to the raw materials that exist in the West, that could be utilized for the purpose of manufacturing steel on the west coast.

I believe it would be highly advisable if we had a map of the west coast here at the present time, Mr. Chairman. I wonder if we have one anywhere. Do you think you would need one?

Mr. EVANS. I wouldn't need one.

The CHAIRMAN. I don't need one. I have it in mind pretty thoroughly. In fact, I have flown all over it.

Mr. EVANS. The three principal ingredients for the manufacture of iron and steel are iron ores, and, if you are going to use a blast furnace, then you want strong coking coals to make coke, and also limestone, plus other minerals.

In the State of Washington we have iron ores, some in the Olympic Peninsula; quite a large tonnage in the Lake Cle Elum district, in west central Washington; vast tonnages in Stevens County in northeastern Washington.

These iron ores were examined about 40 years ago by Professor Solon Shedd. At that time the ores were being developed by various companies. The bodies of iron could be examined much more fully at that time than they can be now because very little work has been done in the last 40 years. This report was published in 1902 by the Washington Geological Survey, giving the quality of iron in the various areas.

In the Snoqualmie Pass district there are iron ores that run over 65 percent iron. In the Lake Cle Elum district the iron ores there would run in the neighborhood of 60 to 62 percent iron. And the same is true of some of the iron ores in northeastern Washington. The iron ores on the Olympic Peninsula, however, carry a large percentage of manganese than they do iron, but there are some combinations there that could be worked.

In very recent years they have done some prospecting up at Mount Sumas in Whatcom County. I am reliably informed that they have uncovered very large tonnages of iron there, but the grade is not as high as either the Cle Elum iron or the eastern Washington iron in iron content. So much for a sketchy discussion of the iron ores of the State of Washington.

The CHAIRMAN. What about your coking coal?

Mr. EVANS. We have in western Washington, in Skagit County, a considerable area of coking coal, coal that has been coked at Cokedale, and also some coal that was mined at Lake Whatcom and coked in the Seattle gas plants.

Senator WALLGREN. Let me point out that these points Mr. Evans is describing are all close to water transportation.

Mr. EVANS. Practically all of them at tidewater. I am working south from Whatcom County. There are some coking coals at Lake Whatcom. Then on the Skagit River, at Hamilton and at Cokedale, there is quite a large area of coking coal. Some of that coal was coked about 40 years ago by the Great Northern Railway.

Coming farther south we have in King County, on the eastern margin of King County, extending from Kangley on south to close to Enumclaw, a considerable tonnage of coking coal in the Cumberland-Pocohontas district, that makes a reasonably high-grade coke, runs about 12, 14, 15 percent ash, has very good structure. But the main body of coking coal in the State is located between Burnett, Wash., in northern Pierce County, and Ashford in southern Pierce County, and extends along a belt there from 6 to 12 miles in width, and about 30 miles in length. At Wilkeson, in this same field, is a very large tonnage of coking coal that will make a coke that is just as strong as

the Pittsburgh coke made from either the Pennsylvania coal or the West Virginia coals.

The northern Pierce County coals run about one-half of 1 percent sulfur as compared with 1 to 1½ percent sulfur in the eastern cokes, and the carrying strength of the northern Pierce County cokes is equally as strong as that of the Pennsylvania or West Virginia cokes. The ash content is a little higher. Our cokes will run 14 to 16 percent ash as against an average of about 11 to 12 percent ash in the eastern cokes.

The cost of producing coke at Tacoma, we will say, or at Seattle will be just a trifle higher than it would be at Gary, Ind., or Pittsburgh, Pa., just a trifle, not a great deal higher.

That covers the principal coking coals of the State. But I would estimate that we have two or three hundred millions of tons of coking coal in this State, taking in Pierce County, King County, and Skagit County.

The CHAIRMAN. How about your limestone?

Mr. EVANS. Well, we have in Whatcom County and Skagit County almost unlimited supplies of limestone at tidewater, and thoroughly suitable for the making of iron and steel.

Senator WALLGREN. Now, what is your knowledge as to the rest of the coast, traveling on south as far as the Mexican border?

Mr. EVANS. Well, I don't know personally, Senator Wallgren, just what the conditions are there, but I get reports from thoroughly reliable sources that in Lower California, that is the Mexican-Lower California and also in southern California, there are almost unlimited supplies and tonnages of iron ore that will run 50 to 55 percent iron, at least that, and that can be quarried or mined by steam shovels, and not very far from tidewater.

Then up on the west coast, at Vancouver Island, at Zebollas, are very large tonnages of high-grade iron that will run over 60 percent iron, that can be quarried and barged into Puget Sound points by barges. At various places in Alaska there are also similar bodies of iron ore. So, taking it all in all, there is no question as to the tonnage of iron ore that can be made available to Puget Sound points and that can be delivered here, per unit of iron content, for about the same as the iron ore is now being delivered at Gary or at Pittsburgh from the Mesabe Range; that is, they are using 51 percent iron there. We could probably get 60 percent iron here for very nearly the same cost per unit.

Senator WALLGREN. How much of this area has been drilled so you have conclusive proof that the ore exists?

Mr. EVANS. In southern California a very large area has been so thoroughly explored that the tonnage is pretty well known. That is in southern California. In Lower California the areas have also been drilled. There has been a considerable tonnage drilled, also, in British Columbia, at Texada Island. There have been several other points drilled, proving tonnages beyond doubt. Large quarries of iron ore in southern Alaska and on the west coast of Vancouver Island can be examined. You don't have to drill those. You just walk over them, just large bluffs.

Senator WALLGREN. How can you or the people interested in this development prove to the Federal Government that you actually have

the ores here in the State and on this coast? When I have taken this matter up with the Secretary of the Interior I am always crossed up by having them point out that they have never had definite and sufficient proof that the ores exist. Is there any way, to your mind, that we could actually prove to the Federal Government that we have this ore, outside of just an oral statement?

Mr. EVANS. Well, I personally collected the samples 40 years ago, on the iron ores of this State, with Professor Shedd, so I could testify as to their existence; at that time, as I told you, the work was being done, and the faces were fresh. At the present time they have all grown up with brush, and it would be rather difficult to locate up in the mountains and back in the distant parts. But I could take any representative from Mr. Ickes' office over the ground, through the Stevens County district, or through the Lake Cle Elum district, or up through Snoqualmie Pass. It wouldn't be much of a trick to take them on the ground and show them we actually have those ores.

Senator WALLGREN. Do you think such a survey would justify the Federal Government in possibly putting in a blast furnace that would cost many millions of dollars?

Mr. EVANS. Well, I am thinking of blast furnaces in terms of \$12,-000,000 to \$15,000,000 for the complete unit. That, of course, is a lot of money. But I feel, I sincerely feel, from all the reliable data that I can get hold of, that there is a sufficient tonnage of iron ore tributary to Puget Sound, by water, to justify the establishment of such a plant.

Senator WALLGREN. To your knowledge, have any well-known engineering companies conducted a survey of these ores?

Mr. EVANS. The Province of British Columbia has had their men in the field and have gotten out some very excellent reports on the iron ores of British Columbia.

Senator WALLGREN. As to our own State, just what has been done?

Mr. EVANS. Well, as I say, a survey was made in 1900 and 1901 by Professor Shedd and myself—at that time I was just a kid. We didn't estimate the tonnages but we saw tonnages there that would run up into quite a number of millions of tons. There is 3,000,000 tons in one block alone on Lake Cle Elum. We knew that without drilling. So, there are large tonnages in the State. However, they are not tributary to tidewater, unless this Sumas Mountain proves to be a larger area than I knew it to be at that time.

Senator WALLGREN. Do you feel that here in the State of Washington we have all the necessary ores from iron, coke, and lime, to manufacture steel right here in this area?

Mr. EVANS. I would have to qualify that somewhat, Senator, by saying that it might not support a large plant. I am thinking now in terms of 300,000 tons a year for a period of 30 years. That would be a reasonable unit. It might be a little bit difficult for me to state definitely that that much ore has already been blocked out in the State of Washington, but if I were advising a large company, I would at least feel that in southern California and in Lower California, and in British Columbia and Alaska we would get all the ore we want, to justify such an investment.

Senator WALLGREN. And all these points are close to water transportation?

Mr. EVANS. And can be delivered here for a very low cost, I think, perhaps a lower cost per ton than is now being delivered at either Gary or at Pittsburgh from the Mesabi Range, because here all water transportation is cheap. As a matter of fact, Senator, we are delivering right in Puget Sound now—this would be of interest to you and your associates—from Dall Island in Alaska, where the limestone is being quarried, to points here on tidewater, at Seattle, limestone for less than \$2 a ton, and that includes the profits. That gives you some idea of what you can do by quarrying and by coming in by water.

Senator MEAD. Has there ever been any attempt by private enterprise to set up a steel-producing plant here in the State?

Mr. EVANS. Yes; about 1900—well, about 1896 and into 1900, an attempt was made at Irondale to manufacture iron or pig iron from bog ore at Chimacum and later mixed with some Texada ore from British Columbia, but they were using at that time charcoal. The entire set-up was amateurish, extremely so.

Later, about 1905, Mr. James A. Moore, a real-estate dealer of Seattle, conceived the idea of plotting a large tract of lots near Port Townsend. Then he financed a pig-iron plant at Port Townsend, but the thing was fundamentally a real-estate scheme and not an iron-producing program. Mr. Moore was not an iron manufacturer, he was a real-estate man.

Senator MEAD. Was there any similar effort in adjoining or adjacent States along the Pacific coast?

Mr. EVANS. Some attempts were made in California, north of Redding, to use some of those ores there, but the set-up was not an economical one. I think a small attempt has been made in British Columbia, but of that I am not certain. But all of them were amateurish. They were not really based on good, sound engineering.

Senator MEAD. With the more recent information which you now have with reference to the possibilities of securing adequate ore and other ingredients, why is it that one or the other of the steel-producing plants don't take advantage of these opportunities out here?

Mr. EVANS. Well, the steel people are smart businessmen. I use that word advisedly. If I had a steel plant in Gary, or if I had a steel plant at Pittsburgh, I doubt very much if I would encourage the building of a blast-furnace plant on the Pacific coast to compete with the plants that I had already existing in Gary and Pittsburgh, provided I could get the steel-consuming people of the Pacific coast to pay the \$15-a-ton freight, or the differential between the steel produced there and what it costs here.

The CHAIRMAN. Has that been the policy of the United States Steel and the Bethlehem Steel Corporation?

Mr. EVANS. I think so.

Senator MEAD. Is it true of all the other steel-producing organizations in the country, would you say? I mean, have they all conspired to prevent the coast from enjoying this development?

Mr. EVANS. I don't see how all the steel companies could get together on a point like that, but the two dominating steel companies are the United States Steel and Bethlehem. They are big enough, powerful enough, and smart enough to dominate the markets of the Pacific coast.

The CHAIRMAN. As a matter of fact, it looks as if the same policy has been pursued as has been and is being pursued by the Aluminum Co. of America.

Mr. EVANS. Absolutely. No question about that at all.

Senator MEAD. It would occur to me that, if they could produce this steel out here on the coast, it would not only reduce transportation costs; it would eliminate the necessity of additional shipping facilities and permit the use of shipping facilities on other avenues of trade.

Mr. EVANS. Well, this has been regarded more or less as a dumping ground for the 2,000,000 tons that is used here on this coast. As long as they can dump it here without another investment on this coast, they are going to do it. That is smart business.

Senator MEAD. As just pointed out, it requires 2,000,000 tons of shipping. If we could set up a steel-producing aluminum-producing unit on the west coast we would be able to utilize that shipping in other channels of trade.

Mr. EVANS. You certainly would; yes indeed.

Senator MEAD. But if it is so attractive and if the profit possibilities are present, it occurs to me that there would be in the steel world some place, men with a pioneering instinct to come out here and set up a competing organization.

Mr. EVANS. Well, there has been a great deal of smoke developed in the East that has not been healthy. For example, Iron Age, which is supposed to be one of the best metal or iron journals in the world, made a statement less than a year ago to the effect that we did not have any coking coal here, in fact, we had no coal at all. Time made the same statement. David Lawrence's magazine made the same statement. Then, when a letter was written to the editor of Iron Age, to the effect that we had 63 billions of tons of coal in this State, and we had a very large tonnage of coking coal, he wouldn't publish that fact in Iron Age, even after stating in a previous issue that we didn't have any coking coals here. In other words, there seems to be a concerted movement on the part of people who are interested, to try and throw a smoke screen over the whole thing here.

Mr. FULTON. Has the Bureau of Mines of the Department of the Interior made any estimates of coking coal or of iron ore?

Mr. EVANS. The United States Geological Survey has, and the Bureau of Mines has published it. Their estimate is 63 billions of tons of coal of all kinds in this State, which is three times the amount of coal there is in the entire anthracite district of Pennsylvania. They also made estimates as to the amount of coking coal we have in Skagit, King, and Pierce Counties, and it runs into a very large total tonnage.

Mr. FULTON. More than enough to take care of such a blast furnace for a period of 30 years or more?

Mr. EVANS. Oh, many, many times that amount. There is no question about it.

Mr. FULTON. So, on coking coal and lime you feel relatively strong, and, if there is any weakness, it would be iron ore, and you feel that that is sufficient?

Mr. EVANS. Well, iron ore in the State, perhaps, might not be as strong as it should be, but we have tributary to this area a sufficient tonnage of iron ore.

Senator MEAD. That is in Lower California, southern California?

Mr. EVANS. Lower California, southern California, Alaska, and British Columbia.

Senator MEAD. Has the volume in those locations been established and proven?

Mr. EVANS. Yes; they have been very thoroughly proven in several cases.

Senator WALLGREN. Mr. Evans, I suppose you know, I guess most of us on the west coast know, that normally more than half of this steel is shipped through the Panama Canal.

Mr. EVANS. Yes. That is true—about seven and one-half dollars per ton freight.

Senator WALLGREN. If the Panama Canal were blocked, the west coast would be just out of luck as far as steel is concerned.

Mr. EVANS. Very much out of luck.

Senator WALLGREN. In the past few years in Congress, in our efforts to try and obtain shipbuilding and steel construction on this coast, we have always had to face that terrible freight rate.

Mr. EVANS. Yes, sir.

The CHAIRMAN. That is all, Mr. Evans. Thank you very much.

Mr. RAYMOND MILLER. Mr. Miller, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. MILLER. I do.

TESTIMONY OF RAYMOND M. MILLER, SENIOR INDUSTRIAL ENGINEER, BONNEVILLE POWER ADMINISTRATION, DEPARTMENT OF THE INTERIOR, PORTLAND, OREG.

The CHAIRMAN. Be seated, Mr. Miller. Give your name and connections to the reporter, please.

Mr. MILLER. Raymond M. Miller, senior industrial engineer, Bonneville Power Administration, Department of the Interior, Portland, Oregon.

The CHAIRMAN. You are with the Department of the Interior and the Bureau of Mines?

Mr. MILLER. No, Senator. I am with the Bonneville Power Administration, which is an agency separate from the Bureau of Mines.

The CHAIRMAN. Have you made any survey of the metals and the coal situation in this part of the world?

Mr. MILLER. I should mention, perhaps, that before my connection with the Department of the Interior I was consulting engineer with the War Department, during which period I conducted a survey, feasibility survey, on iron and steel. At that time I was associated with a Dr. Edwin T. Hodge, who made a survey of coal and coke and of iron ore and limestone available for iron production in the Northwest.

The CHAIRMAN. What did you find?

Mr. MILLER. We found that it would be possible to supply a plant of adequate size in the Northwest with iron ore, coking coal, and lime-

stone of sufficient purity and quality to make iron comparable to that being produced in the Eastern States.

The CHAIRMAN. Is this information in the records of the Department of the Interior?

Mr. MILLER. Reports have been published on these surveys. Those reports, although now out of print, have been distributed to the public at a certain cost, and I think are available in some of the principal libraries.

The CHAIRMAN. They are official Government documents?

Mr. MILLER. That is right.

Senator WALLGREN. Do you think we have the necessary minerals to make a high-quality steel in this area?

Mr. MILLER. Yes; we do, Senator. There are in the Northwest and in California certain very high-grade ores that can be processed into an iron and steel that is comparable to Swedish steel.

That means, of course, that you must have, first, a high iron analysis; second, a low sulfur and phosphorus analysis; and, third, that you must process it by methods that prevent the introduction of impurities into the smelting.

Those methods generally involve the use of charcoal for smelting. If we were to produce a very high grade of iron and steel in the Northwest, let us say, comparable to Swedish steel, then it would be desirable to consider the introduction of electric smelting, using charcoal as the reducing agent. Under those circumstances we have ores that are of adequate purity.

Senator WALLGREN. And you feel that we in this area have sufficient coke, iron, and lime to furnish an adequate supply for this coast?

Mr. MILLER. I would answer "yes" to that question. As Mr. Evans has pointed out—and I consider Mr. Evans an authority upon this question—there is adequate coal of coking grade that could be made available for blast furnace smelting to supply the requirements of iron and steel in the Northwest.

The question of ores is not a serious one. Unfortunately, there have been no comprehensive field surveys to prove the tonnage of iron ore available, but we do know from such surveys as have been made, and from other reports and information that have come to us, there is a very large tonnage of iron ore that would supply a medium size, not a large size, but a medium size, steel operation over the necessary amortization period for the plant.

Limestone is not a problem. There is more than adequate limestone for a very large industry.

Senator MEAD. Mr. Miller, you made a point that is very interesting to me. You said there haven't been any recent studies, any recent investigations. That point was brought out by Mr. Evans. Whose duty is it to make these investigations or studies, or are they just made in sort of a haphazard manner, occasionally?

Mr. MILLER. In general, if private interests were interested in establishing an iron and steel industry, they would examine the most promising deposits and spend the necessary funds to drill and prove the amount and quality of those ores.

Unfortunately, as Mr. Evans has pointed out, the industries that are in control of the western markets have not been interested to the extent of examining and proving those ores. As a result, we have no

definite proof of the total tonnage that would be available. The Bureau of Mines and the U. S. G. S. generally examine, I should say, superficially. They do not drill and prove ore deposits. If we were interested in proving the quality of ore available for defense purposes, then I should say it is the Bureau of Mines' duty, and they should be provided with funds to drill the deposits available.

Senator MEAD. But under the present-day conditions it doesn't seem to be the duty of anybody to make an investigation of the natural resources or the mineral resources that we have in these parts.

Mr. MILLER. It seems that way.

Senator MEAD. It isn't being done.

Mr. MILLER. It seems that way to me.

Senator MEAD. If it was done by someone who assumed that it was his duty, how long would it take to do the job, to bring it right up to date?

Mr. MILLER. Generally speaking, a drilling job that would prove ore deposits of sufficient promise would take a period of perhaps 8 to 12 months. It is a job that requires systematic drilling and examination of samples, with analyses. Generally speaking, it is quite a long job.

Senator MEAD. It would take from 8 to 12 months. And how much would it cost?

Mr. MILLER. It sometimes costs \$100,000 to drill and prove one large deposit. It may even cost more than that.

Senator MEAD. And for the State, covering the entire State?

Mr. MILLER. No. Just for one large deposit, Senator. If the deposits are exposed at the surface much of the necessity for drilling and proving is eliminated. Otherwise a systematic drilling program is required to determine the extent and depth of the ore body, its overburden and other essential characteristics. This is a rather expensive procedure.

Senator MEAD. Would the State pay for any part of that?

Mr. MILLER. If the State were interested in that, I would say that it would be the State's function to help in that work, to promote that industry.

Senator MEAD. But the State has never attempted a program of that kind?

Mr. MILLER. Not of that kind.

Senator MEAD. From the standpoint of enrichment and employment and increased tax revenues, it would seem to have some local bearing?

Mr. MILLER. Yes; it would, Senator.

The CHAIRMAN. Maybe the State is overlooking a bet by not making a survey such as that.

Mr. MILLER. The State has made field investigations of various of its mineral deposits, but the drilling of an iron ore area, as I have pointed out, is quite an extensive job and is expensive. I think that they have somewhat stayed away from that because of the desire to keep their State expenditures low.

The CHAIRMAN. Our State has made a complete survey along that line and facts are available whenever they want to be used. Now the emergency is facing us. If the State of Washington had those figures available for presentation to the Federal Government, they would not have any trouble in proving it to the Government. From what I can

hear this morning, it seems to me that there would be no trouble to prove that the ability is here to produce. Goodness, now is the time when we need production. We would get some concrete results then.

Mr. MILLER. It is my opinion, Senator, that, while the State should cooperate in such a survey, the Federal Government at this time should be very deeply interested in examining this situation.

The CHAIRMAN. Of course, the Federal Government is vitally interested, but, then, I want to impress upon the States and the local governments, as we tried to impress upon the city of Los Angeles, it was their duty to police their area, it is the States' business to do a little something for themselves, as well as to expect the Federal Government to furnish all the money. We don't expect the Federal Government to furnish all the money, and I don't think any State expects that.

Senator MEAD. It occurs to me, Mr. Miller, that there is an over-emphasis on conspiracy and insufficient emphasis on good, hard business practice. There may be, probably there are, all the ingredients necessary for the production of iron and steel on the west coast, but you will have to admit that there isn't a recent investigation to prove to the hard-headed business world that they are here, and in the quantities and volumes that are really here.

These sketchy investigations that are 30 and 40 years old won't attract the emergency dollars in this national-defense program. So that there really should be some method whereby the Federal and the State authorities or private enterprise would be able to furnish the average businessman with an up-to-date investigation of just what is here. I don't know how that is going to be arranged. Perhaps we might be able to do in the field of our mineral resources what we do insofar as our highway program is concerned, or our social security program is concerned, do a little matching with the State government, in that way probably get a real modern, up-to-date tabulation of the mineral resources of the whole country.

It seems to me that that is almost as important as anything else in connection with our national-defense program. We ought to know what we have, and it ought to be up-to-the-minute information.

Mr. MILLER. Yes; I agree with you, Senator, that it is highly desirable that we have a more accurate examination of our resources available, whether that is a State function or whether it is a Federal function or cooperative function.

Senator MEAD. It is both. It is the function of both the Federal and the State Governments. If the State shows a decided interest, the Federal Government usually comes in and takes a hand.

Senator WALLGREN. You do believe the State government and the Federal Government and certain responsible people have this knowledge that there are sufficient ores available in the State of Washington to justify the erection of a blast furnace here for the manufacture of steel?

Mr. MILLER. I believe that they feel there is enough ore, but they hesitate, due to the fact that they have no actual proof, which, of course, involves actual field drilling. Without field drilling, or without visual examination that enables you to say with some certainty that ore is there, you must be rather uncertain.

Senator WALLGREN. I thought there had been enough of it drilled or shafts sunk to determine the availability of a certain amount of the raw materials?

Mr. MILLER. There has been.

Senator WALLGREN. That would justify at least one plant?

Mr. MILLER. Yes; I can say that there is enough ore that is known in various ore deposits in the Northwest that would justify at least one small plant.

Senator WALLGREN. Now, your position with the Bonneville people is that of metallurgical engineer, is it not?

Mr. MILLER. That is right.

Senator WALLGREN. And you have lived out here in the West and know these hills pretty well?

Mr. MILLER. Yes; I have lived in the West for 35 years. I have done most of my professional work in the West so that I am quite familiar with the West and with its minerals.

Senator WALLGREN. And just what has your position been with the War Department for some time?

Mr. MILLER. As consulting engineer.

Senator WALLGREN. On metals?

Mr. MILLER. Yes.

Mr. WALLGREN. And you have just returned to Bonneville?

Mr. MILLER. I have been with Bonneville for the last 2 years.

Senator WALLGREN. I think that will be all for a while.

Senator MEAD. Senator Wallgren just asked the question of you as to whether or not there is a sufficiency of ingredients for this plant to be located in this State. I think that you said awhile ago that—and this, I think, was also the opinion of Mr. Evans—it would be a certainty the plant could be much larger if the ingredients of adjacent States were taken into consideration as well. Under those circumstances, there would be, in your opinion and Mr. Evans' opinion, no doubt but what you could operate a very substantial blast furnace on the west coast, taking into consideration the ingredients that would be collected from Alaska to lower California?

Mr. MILLER. Yes; I am in full agreement with Mr. Evans on his statement.

Senator MEAD. But I can see where our country and our States lack a program that would bring all this information up to date, so that we not only have the drilling and the boring but have all the technical and scientific information necessary to tell us just what resources we have. I am of the opinion that we haven't scratched the surface, so far as our country's wealth is concerned. I am sure that there is ample room for expansion of many industries out here and in other sections of the country, and we need that up-to-date information. It seems that the Federal Government and the State government ought to get together and have a program of some kind.

Mr. MILLER. Yes; I feel so, Senator.

The CHAIRMAN. That is all, Mr. Miller.

Mr. VANDERVEER. Mr. Hetherton, executive secretary of the State planning commission, can give you some information on this.

The CHAIRMAN. Mr. Hetherton. Do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. HETHERTON. I do.

TESTIMONY OF P. HETHERTON, EXECUTIVE OFFICER, WASHINGTON STATE PLANNING COUNCIL, OLYMPIA, WASH.

The CHAIRMAN. Give your name and connections.

Mr. HETHERTON. P. Hetherton, executive officer, Washington State Planning Council, Olympia, Wash.

I would like to answer directly some of the questions about the position and the cooperation of the State in this matter of research. I can speak for Governor Langlie to this effect, that the State is ready to do its part and is doing its part.

At the last session of the legislature, for instance, at the request of the Governor, the legislature appropriated \$150,000—I will admit it is not a large sum in relation to the amount of research to be done—to the State planning council to conduct just such research.

When I was back in Washington in May, I discussed this matter both with Dr. Mendenhall and Dr. Sayers, and pointed out to them the position of the State, and that it was ready to cooperate with both these departments.

At the present time we have reports being drawn on iron ore—that is, brief, summary reports—on tungsten and on chromium, so that we have——

The CHAIRMAN (interposing). What does your report on iron ore show?

Mr. HETHERTON. We are proceeding to have that done right now, but we have witnesses here this morning who are here to discuss these matters. Mr. Sheldon Glover, who is a geologist at the college at Pullman, is prepared to discuss that, and also Mr. Melrose, who is a geologist with the department of conservation and development.

The point that I want to emphasize again is the position of the State, that it is ready to do its part, as far as it is financially able.

Senator WALLGREN. We don't want just another bunch of reports and surveys and a lot of oral statements. We want some absolute proof.

Mr. HETHERTON. That is true.

Senator WALLGREN. This is just going to be a repetition of what we have had over the past 40 years in this State. Everybody talks about what we have got, but we have never been able to prove that we have anything. It seems to me we have sort of booted the ball in the last few years, and we ought to have been able to go out and at least drill some of the properties so we could come to the Federal Government and say, "We do have the ore available."

Every time I try to do anything about it back there in Congress, the Department of the Interior or anything else, I haven't sufficient proof to lay before them to justify the Federal Government's making any expenditure at all in this area. I would rather the State wouldn't waste this \$150,000. I would rather it go out and drill a few acres of ground than to go out and just bring in another paper report on what we have. I am just getting fed up with it a little bit, and I would like to have some proof myself. I am just a layman in this game, as well as a lot of other people.

If the Federal Government is going to put up \$12,000,000 for a blast furnace around this country, they certainly would like to have some proof that the ore is available. Everybody talks about it, and

yet nobody actually does anything about it. If somebody will bring in some engineering reports here, with a drill sheet, with blocked-out ground, we can get some place.

Mr. HETHERTON. Of course, as Mr. Miller says, the actual drilling, the diamond drilling, is a very expensive matter. To the extent that the State can go, it is ready to cooperate with the Federal Government in doing that drilling.

Senator WALLGREN. It is too bad we didn't do a little of this under the W. P. A. the last couple of years.

Senator MEAD. Mr. Hetherton, there is no reflection on the present administration in the State (I know very little about it), but I think Senator Wallgren has said what was in my mind, and what I intended to say. But now that it is said, let me ask this question: Has the State ever, in the last 40 or 50 years, made any concrete, specific, scientific investigation of its mineral resources?

Mr. HETHERTON. From the point of view of geology, yes. Not from the point of view of actual drilling. It has, to a limited extent, conducted trenching, and so forth.

Senator WALLGREN. But from the point of view of geology, can you obtain proof?

Mr. HETHERTON. I would leave that to the geologist to answer.

Senator MEAD. Evidently it isn't sufficient for the manufacturer.

Mr. HETHERTON. It would not be.

Senator MEAD. I know your Senator, as he has said, has repeatedly brought this matter to the attention of the authorities in Washington. I know of no one better versed along this particular line than he is. He has discussed it with the committee on numerous occasions, but he requires the support and fortification of a scientific, technical, up-to-date investigation, including the drilling and all that is necessary for the proof. He requires that in order that he might make some progress.

Senator WALLGREN. The position we are in at the present time is, a lot of people, possibly, in our State, haven't this point clear: This is not a strategic minerals committee. It is not a committee investigating the natural resources of the country. It is a committee that is interested in the national-defense program and trying to investigate into the bottlenecks that have been created, to try to do away with this shortage in steel, to try to do away with this shortage in aluminum. We want to break those bottlenecks, if we possibly can. We come out here to the State of Washington now——

The CHAIRMAN (interposing). At the request of Senator Wallgren. That is the reason we are here.

Senator WALLGREN. Interested in those two particular metals. Because of our interest and because of the fact we are trying to break these bottlenecks right now, we find an opportunity now to assist the State of Washington in developing its natural resources.

There are other committees at Congress that are actually engaged, and have been over a period of many years, in looking into the matter of strategic minerals. The Military Affairs Committee is working on that. The O'Mahoney committee is going into the matter of monopolies, trying to find out how certain big businesses are throttling the development of steel and aluminum in other sections of the country. But our particular job; specific job, is to try

to break this bottleneck that we know exists as far as steel and aluminum and light metals is concerned. Again, I say, it certainly is an opportunity for the State of Washington to prove itself.

In a way, it is a little embarrassing for me to try to bring it up, because I know up to date we haven't been able to bring out sufficient proof that we have these metals that would justify the Federal Government immediately constructing a blast furnace and going to work to try to break this steel shortage here on the west coast.

The CHAIRMAN. Did you have anything further?

Mr. HETHERTON. Nothing further at the present time.

Mr. VANDERVEER. Mr. Landahl.

The CHAIRMAN. Mr. Landahl, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. LANDAHL. I do.

TESTIMONY OF HENRY J. LANDAHL, SWEDISH IRON AND STEEL ENGINEER, VANCOUVER, BRITISH COLUMBIA

The CHAIRMAN. Have that seat, Mr. Landahl, and give your name and connections to the reporter.

Mr. LANDAHL. Henry J. Landahl, Swedish iron and steel engineer, Vancouver, British Columbia.

Senator WALLGREN. In past conversations with you, Mr. Landahl, you have told me over and over again of the vast deposits supply of iron, coal, manganese, and limenrock we have on this coast, and pointed these things out to me to try and obtain my assistance in getting some Federal aid in the construction of a blast furnace here on the west coast in this area. I wish you would go ahead and tell the committee what we have, as far as you know, from your studies here on the west coast, in the way of ores.

Mr. LANDAHL. I and my associates engaged the Freyn Engineering Co. of Chicago, Ill.—

Senator WALLGREN (interposing). How long ago was that?

Mr. LANDAHL. 1929—to come out to the Pacific coast and go over the State of Washington and the Province of British Columbia with a view to examine the iron ore, coking coal, and commercial situation here.

We diamond drilled an ore body on Texada Island and blocked out about 12,000,000 tons of iron ore. This mine was selected to demonstrate quantity available because of the mine being situate right at the ocean where you could land and step right on to the ore.

Senator WALLGREN. That, however, happens to be in British Columbia.

Mr. LANDAHL. Yes. The ore on Texada Island proved to be as high grade as any in the world. Then I went into the State of Washington with the Hewitts and Major Griggs of Tacoma, into the Sumas iron-ore field—a lower grade hematite ore having been discovered there—

Senator WALLGREN (interposing). Just a moment, gentlemen, that is up here in the northern part of the State of Washington, close to the Canadian border.

Mr. LANDAHL. I engaged Mr. Frank C. Greene of Cleveland, Ohio, to examine this field. Mr. Greene is a geologist of international

reputation, having for years represented the Bank of England, the late James J. Hill, and many large corporations in the East, in coal and iron ore examinations, taking in the entire Pacific coast. Mr. Greene certified to a tonnage of 100,000,000 tons of hematite iron ore on 800 acres.

The CHAIRMAN. That is in the northwest corner of Washington State?

Mr. LANDAHL. Yes. This ore can be mined for 25 cents a ton, 30 miles, the ground flat as this table. The St. Paul & Milwaukee and the Northern Pacific are both in the vicinity and I figure the ore can be shipped to Bellingham Harbor for 50 cents a ton. These are costs prevalent in the East and in Great Britain, and what they can do, we can do likewise on the Pacific coast.

Senator WALLGREN. Just a moment.

Mr. Miller, do you know of this particular ore body?

Mr. MILLER. No; I am not familiar with it, Senator.

Mr. LANDAHL. I have Mr. Greene's signed report for that tonnage. We also have the signed report by Mr. Charles E. Phoenix, M. E., a man who lives in Bellingham with his family, his good name and reputation in that report—he certifies to 100,000,000 tons there. That is sufficient for a large iron and steel industrial development.

In California we find the Southern Pacific Railway paid \$750,000 for the "Iron Mountain," a body of iron ore situate about 75 miles inland near their line. This ore is available for an iron and steel industry on the Pacific coast.

Then we have available the San Vicente iron-ore field, situate in Lower California, Mexico, owned by the Union Oil Co. and Mr. Leslie J. Webb, the iron-ore tonnage there available figured to be as large as the Mesaba Range.

You gentleman wished to know if we had had our ore and coal resources gone over by any reputable engineering firms and engineers, besides those of the United States Government. I have already mentioned the Freyn Engineering Co. In the 1920's this company had a \$500,000,000 contract, remodeling the Soviet Russia iron and steel industry; the H. A. Brassert & Co., Ltd., of London has gone over our situation. This company had charge of building iron and steel works in Germany. Then we had Arthur G. McKee & Co. examine our situation. The Freyn Engineering Co. calculated the cost of producing pig iron on the Pacific coast at \$8.35 per ton, at salt-water harbor. These are the foremost authorities in the world, we could go no higher.

The CHAIRMAN. Do you have those reports? Are those reports available so they can be made part of our record.

Mr. LANDAHL. Yes.

Senator WALLGREN. Will you submit copies to the committee?

Mr. LANDAHL. Yes; I will be only too glad to. Upon these reports, and upon negotiations for finance, we have expended over \$675,000—with friends in Tacoma, British Columbia, Detroit, New York, London, and Sheffield I had our enterprise financed a dozen times, only to be stopped by eastern opposing interests.

Senator WALLGREN. How were you stopped?

Mr. LANDAHL. The Jacklin & Thaine effort to build a blast furnace near Seattle might serve as an example. Twenty-four eastern busi-

ness houses subscribed \$1,000,000 for Jacklin & Thaine to use in surveying the resources of the Pacific coast—available for iron and steel production. The money was placed with Hayden & Stone Banking House, Boston. Jacklin & Thaine rented two floors in the Hoge Building, Seattle, and employed 24 engineers. These engineers went from Alaska to Mexico and in through adjoining States. Two years were spent in this survey and when completed, some five large volumes of data gave the result—proving we had ample resources for pig-iron production on a large scale.

When Jacklin & Thaine were through with their engineering work, the eastern businessmen, that had put up the cash, engaged J. E. Johnson, Jr., of Pittsburgh, a famous blast-furnace operator, to go over the situation developed on the Pacific coast. The only change Mr. Johnson recommended was in that of location of the blast-furnace unit to Puget Sound, as he recommended immediate commencement.

At this psychological moment Judge Gary, the then head of the United States Steel Corporation came out to Seattle and took Jacklin back to New York, and all was off. Thaine died a ruined, broken-hearted man. These are the tragedies that are taking place on the Pacific coast.

Our coking coals have been proved up by the United States Government Geological Department in Washington, D. C. In the year 1917 the Geological Survey Department issued reports which gave the State of Washington a coal tonnage of some 60,000,000,000 metric tons, of all grades above lignite.

Senator WALLGREN. That takes in Alaska, too?

Mr. LANDAHL. No. The tonnage given Alaska is above 150,000,000,000 metric tons. In percentages we have 55 percent of the known coal tonnages of the world available for our Pacific coast industrial development—or 77 percent of the known coal tonnages of the North American Continent are located on the Pacific coast.

Senator WALLGREN. Is that coking coal?

Mr. LANDAHL. This tonnage takes in all grades above lignite.

Senator WALLGREN. Do you feel there is a sufficient supply of coking coal?

Mr. LANDAHL. Yes. Mr. George Watkin Evans comes before you as an expert in coals. He states, there is available about 300,000,000 tons of high-grade coking coal in the Wilkeson field, 30 miles from Tacoma, and that is sufficient to start with. One of the United States Steel Corporation's foremost operators, Col. W. C. Loyd, was engaged by us, after he resigned from the post he held with the corporation, to go over the coal and commercial situation in the State of Washington. It was his opinion that we had here the groundwork for the world's most promising industrial development.

You understand, with a manufacturing cost of \$8.35 per ton of pig iron at site on salt-water harbor, as against the cost at Pittsburgh of \$15.25, plus \$5.15 per ton freight to salt-water harbor, a total of \$20.40 per ton cost—we shall lead the world in manufacture—if we are permitted to start. I have proved we have ample iron-ore supplies in this State. Even if we did not—there is nothing in the way of us going 1,400 miles to Lower California for ores. I can show you photographs of a field there with some 500,000,000 tons of high-grade iron ore available for shipping 3½ miles from salt-water

harbor. The Bethlehem Steel Corporation goes 6,000 miles to Chile for its high-grade iron ores. Chile is an entirely foreign country to us, we have nothing much to do with that country, while Mexico is close to us and we have much in common with that land.

In Alaska we have iron-ore deposits into which some 300 diamond-drill holes have been sunk, proving a very high-grade magnetite iron ore.

Senator WALLGREN. And you can furnish copies of these reports to the committee?

Mr. LANDAHL. Yes, sir.

Mr. VANDERVEER. Where is that deposit?

Mr. LANDAHL. In Alaska, on islands up there. I have engineers' reports showing 1,000,000,000 tons in one place and 1,000,000,000 tons in another place. These reports are not fairy tales. What we are able to show on the Pacific coast, the best engineers in the iron and steel world have certified to.

Mr. VANDERVEER. How is the ore on Sumas exposed?

Mr. LANDAHL. In one place a creek cuts through the ore body and exposes about 75 feet of ore, and we have driven tunnel after tunnel. This is a low-grade ore. We have analysis from 30 to 58 percent. My engineers give an average of 48 percent for this field. Even if this ore went as low as 20 percent—the hundreds of millions of tons, available for cheap mining rights in this State, is a tremendous asset. The Alsace-Lorraine iron ores average 30 percent, are very impure, but for the possession of these ore lands two major world wars have been fought. In Oxfordshire, England, 20 percent iron ore is being used, so impure that it took United States engineers quite some time to develop a process for using these.

Senator WALLGREN. Mr. Landahl, have you a copy of that report with you?

Mr. LANDAHL. No.

Senator WALLGREN. Can you bring it up this afternoon?

Mr. LANDAHL. Yes; I can.

Senator WALLGREN. We want Mr. Miller to go over that report.

Mr. LANDAHL. Splendid.

Mr. VANDERVEER. Can you tell us how the Bethlehem Steel Co. hauls its ore?

Mr. LANDAHL. From Chile, 6000 miles by water, through the Panama Canal—about 12,000 miles for the ore carriers to travel.

Then picture the United States Steel Corporation going 1,485 miles from Pittsburgh for its ore supply—185 miles from mines to Lake Superior by rail; loaded there onto boats it is taken 1,000 miles across the lake and loaded on cars for a 300-mile trip by rail to Pittsburgh and there stored, while all equipment is frozen in for some 5 months each year—and then they make pig iron at as low as \$15.25 per ton. This stands out as one of the world's greatest engineering feats—but the bankers on Wall Street had nothing to do with this mighty development, engineers did that, the bankers sneaking in, reaping harvests. We on the Pacific coast have been prevented by bankers from building blast furnaces on the Pacific coast—Wall Street controlling all private finance in the United States, Canada, and Great Britain.

Senator WALLGREN. All of these surveys grew out of a desire of private capital to develop some of these resources?

Mr. LANDAHL. Yes; and we have been stopped every time we tried to secure finance. We never got to first base. Once I secured a commitment from the British Government for \$12,000,000 and the United States Steel Corporation stopped me from making use of the same.

Private sources can do no more than we have done, we can go no further, and so I handed this entire work over to men who can place our situation before the Government, as the only source that can build a blast furnace on the Pacific coast.

The CHAIRMAN. Thank you, Mr. Landahl. I think that covers the situation.

The CHAIRMAN. Thank you, Mr. Landahl. I think that covers the situation.

Mr. VANDERVEER. Mr. Glover.

The CHAIRMAN. Mr. Glover, do you solemnly swear to tell the truth, the whole truth and nothing but the truth, so help you God?

Mr. GLOVER. I do.

TESTIMONY OF SHELDON L. GLOVER, ASSISTANT SUPERVISOR, STATE DIVISION OF GEOLOGY, PULLMAN, WASH.

The CHAIRMAN. Be seated and give your name and connections to the reporter.

Mr. GLOVER. Sheldon L. Glover, assistant supervisor, State Division of Geology.

The CHAIRMAN. You have heard the testimony before this committee this morning. As State geologist, what have you to add to the record?

Mr. GLOVER. In the essentials, I would be quite in agreement. In some of the details I would not be so much in agreement.

The CHAIRMAN. In what way would you disagree with the details?

Mr. GLOVER. Well, I believe that we have sufficient iron ore, sufficient limestone and, certainly, sufficient coke to support a steel industry here, but I believe we should draw on adjacent territory, California, Oregon, Washington, Texada, what-not, to support that industry, using what we have in Washington, of course. But I do not think that our iron ore deposits of Washington are sufficient for anything but a small industry.

Senator WALLGREN. On what do you base that opinion? What have your surveys shown?

Mr. GLOVER. I might straighten out one point that has been mentioned, that a survey was made of the iron ores of Washington back in 1902, I believe. Since that time a survey was instituted by the University of Washington, carried on by a man by the name of Whittier. Since that report, at the request of the State legislature, a report was made by Olaf Jenkins, and I believe the date of that was about 1925, if I remember correctly, somewhere along in there, a rather complete report on the iron possibilities of the State, also on coke, limestone, and alloying material. Of course, since that time this Army report Mr. Miller mentioned, under the direction of Mr. Hodge, has come out. So we have had several good reports on these various things.

Since these definite reports were made, the State geological survey and also the State division of mines and mining have been carrying the same investigation on, investigating the various deposits, bringing our information on them up to date, and at the present time the files are rather complete.

Also, since that time, the United States Geological Survey, I believe it is, has been making an investigation of our iron ores.

Senator WALLGREN. Are you acquainted with the Sumas field that was described by Mr. Landahl?

Mr. GLOVER. I am.

Senator WALLGREN. Do you think that is all that he says it is?

Mr. GLOVER. When he used the term "low grade" I am in agreement. There is a lot of it. It is very low grade. It has certain kidneys in it that are rather high grade.

Senator WALLGREN. To your knowledge, would cheap electricity play any part in the production of this steel?

Mr. GLOVER. Cheap electricity would make or break most of these deposits. They hinge upon the availability of cheap electricity, particularly in that the bulk of our iron deposits are magnetite, refractory ore, that requires a lot of electricity to develop them. We have very little hematite in the State.

Senator WALLGREN. That is all.

Mr. Vanderveer, have you another witness you would like to call?

Mr. VANDERVEER. Major Kane is here in attendance, from Tacoma. I didn't know you were more interested in hearing experts than laymen. He can testify about the availability of some land for a plant site at Tacoma. In other words, the port commission at Tacoma has set apart a great tract of land. It agrees to supply water frontage, do the dredging, sell this land for \$200 an acre, which is just the price of farm land.

Senator WALLGREN. How about swearing you in here a little while, Mr. Vanderveer? I think you are pretty well acquainted with this thing. We will hear from you, if you will take this chair.

The CHAIRMAN. Mr. Vanderveer, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. VANDERVEER. I do.

TESTIMONY OF GEORGE F. VANDERVEER, ATTORNEY, SEATTLE, WASH.

The CHAIRMAN. Take that chair, Mr. Vanderveer, and give your name and connections to the reporter.

Mr. VANDERVEER. My name is George F. Vanderveer. I am an attorney engaged in the practice of my profession in Seattle. I represent a great many labor unions. It was because of that contact, I think, that I was approached and asked to interest myself in the matter of developing a pig-iron plant in Puget Sound. It was believed, I think, that perhaps we wouldn't be controlled by a steel company.

I am not a geologist at all or a chemist, or a metallurgist. I have done a good deal of reading recently on those subjects. I have been in correspondence with ex-Governor Sulzer, of New York, who is the sole owner of Prince of Wales Island in Alaska. I have, in fact, a

letter from him here. I think that is about 550 miles from Puget Sound.

There is a tremendous body of magnetite ore there that has been drilled very extensively. There is also a large deposit of copper. They lie in two mountains, between which there is an inlet, where there are facilities for loading boats. I understand from ex-Governor Sulzer that a good deal of copper ore has been mined and shipped, but no iron ore.

For some strange reason some of the big steel companies, he writes me, are now interested in trying to buy his island.

This Sumas Mountain I have never seen, of course, but I am told that anyone who will, can go there and see iron ore exposed for a depth of 75 feet over an area of several hundred acres. It is not a magnetite ore; it is chiefly a hematite ore.

The CHAIRMAN. What is the difference between those two terms? What do they mean, for the benefit of this record?

Mr. VANDERVEER. As I told you awhile ago——

Senator WALLGREN (interposing). We might let Mr. Miller answer that question.

Mr. MILLER. Magnetite, Senator, is a little higher oxide. Its formula is Fe_3O_4 .

The CHAIRMAN. You are getting into still deeper water. We don't know any more now than when we started. Tell us the difference between the two terms. What do they mean? Don't tell us in chemical figures we can't understand.

Mr. MILLER. Hematite is an ordinary red oxide of iron that is generally the standard ore for blast-furnace smelting.

The CHAIRMAN. Now you are getting somewhere. What is the other one?

Mr. MILLER. The magnetite ore is a higher oxide. It is a black oxide which is generally called lodestone. It is magnetic iron, and is very difficult to smelt in the blast furnace, because it requires a higher temperature.

Senator WALLGREN. Can you smelt it with heat?

Mr. MILLER. Yes. It is smelted in the blast furnace, as a matter of fact.

Senator WALLGREN. I mean with electric heat.

Mr. MILLER. Electric heat is simpler.

The CHAIRMAN. Then the hematite ore. How do you spell it?

Mr. MILLER. H-e-m-a-t-i-t-e.

The CHAIRMAN. The hematite ore is the kind that the steel companies and everybody would use, if they could get it?

Mr. MILLER. That is right.

The CHAIRMAN. That is the ore that is easily smelted and made into steel and iron?

Mr. MILLER. Yes. It is the basis for standard practice.

The CHAIRMAN. They make pig iron out of that easily, and it costs more to make it out of the other kind?

Mr. MILLER. Yes.

Senator WALLGREN. But magnetite could be used with electric heat?

Mr. MILLER. Yes; magnetite would be a good ore for electric smelting, because you can get higher temperatures and, chiefly, be-

cause it is a very much higher grade than hematite and, generally, of somewhat higher purity.

Senator WALLGREN. Can you do the job economically with, let's say, our cheap power in this section of the country?

Mr. MILLER. Yes; but at some increase in cost over blast furnaces.

Senator WALLGREN. Yet you do acquire a higher grade of ore or a higher grade of iron?

Mr. MILLER. Yes; you produce a higher grade of iron.

Senator WALLGREN. Well, then, both ores would be very useful to us.

Mr. MILLER. That is right.

Senator WALLGREN. One, because of our cheap power and the other one because it is the commonly used ore.

Mr. MILLER. Yes.

Mr. VANDERVEER. Isn't it true the Bethlehem Steel Co. smelts magnetite almost exclusively?

Mr. MILLER. I wouldn't say almost exclusively, but they do smelt it in the blast furnaces.

Mr. VANDERVEER. Using coke?

Mr. MILLER. Yes.

Mr. VANDERVEER. Because of my connection with organized labor, I was interested and, of course, they are interested in the employment problem which this all presents. So I had wires sent to the superintendents of the O. P. M. offices in San Francisco and Los Angeles, respectively, to find out how many men were employed in the shipbuilding industry. I received a reply which I will be glad to offer for the record, if you wish it.

Senator WALLGREN. Will you read it?

Mr. VANDERVEER. From A. Probert, San Francisco.

Answer your telegram August 18, twelve shipyards in district covered by this office employ approximately 43,000.

(The telegram referred to was marked Exhibit No. 111 and is included in the appendix on p. 2269.)

Mr. VANDERVEER. Then from W. K. Hopkins at Los Angeles:

Eleven yards in southern California now employing approximately fifteen thousand.

(The telegram referred to was marked Exhibit No. 112 and is included in the appendix on p. 2269.)

Mr. VANDERVEER. These are both dated the 19th of this month. By telephone I learned from General Windsor, who is in charge of the Seattle office of the O. P. M., that there are employed in Oregon and Washington, both of which come under his jurisdiction, 29,068 men. So that makes a total, for the three States, of 87,068 employees, which will be very greatly increased because I know, as a matter of common knowledge, that other shipyards are being constructed, and you have learned this morning that they are 7,000 short of employees in the ones that are already operating.

The CHAIRMAN. What will happen to the 87,000 men if the emergency ceases or we quit building ships?

Mr. VANDEVEER. It isn't just the 87,000 men, for there are 348,000 men, women, and children dependent on those earnings.

The CHAIRMAN. What is going to happen to these 87,000 men if we quit building ships?

Mr. VANDERVEER. Not only when we stop building ships on the Pacific but when the big eastern steel companies transfer their shipbuilding operations to the east coast, which they did during the last war, these men just go out of employment.

The CHAIRMAN. Have you thought of any program for the care of the union men whom you represent, in case of an emergency like that?

Mr. VANDERVEER. A stabilized shipbuilding industry is necessary, of course. We have an ocean here. We use ships. We build ships. We have five times as fine a place to build them as any place on the Atlantic coast, because of climatic conditions. Our men can work out in the open, which is virtually what a shipyard is, every day of the year. They can't do that in the East. They don't have to wear gloves or mittens. Their efficiency is improved.

I am told by people who pretend to know that on the 5 ways which Skinner & Eddy operated during the last war, they sent down more ships than they did on Hog Island's 50 ways. To stabilize that, you must have an industry that is not dependent on eastern steel, certainly, and that is our answer. That is the reason I bring these figures to you, and you can corroborate them, of course, from the record of the O. P. M.

I have here some labor-union officials connected with the metal trades department of the American Federation of Labor, to tell you that during the peak shipbuilding-construction period of the first war, Boilermakers Local Union 104 had over 19,000 members in this city, and just a little while later it had 135. Just translate that into terms of human misery, if you please.

Senator WALLGREN. Are there any others here in the room that have something to add to what has already been said this morning, as far as the steel industry is concerned?

Mr. VANDERVEER. Mr. Taylor.

Senator WALLGREN. We wanted to conclude with the steel, but we will take that matter up again this afternoon, as long as there is someone else to be heard.

The CHAIRMAN. The committee is going to recess until 2 o'clock this afternoon when they meet here. This afternoon we will have Dr. Raver from Bonneville.

(Whereupon, at 11:55 a. m., the committee recessed until 2 p. m., Monday, August 25, 1941.)

AFTERNOON SESSION

The committee met at 2:05 p. m. pursuant to noon recess, in courtroom No. 4, United States Courthouse, Senator Harry S. Truman presiding.

The CHAIRMAN. The committee will come to order.

Senator WALLGREN. We will close up on the steel business by calling Mr. McMillan. Is Mr. McMillan present? Will you step up, please?

The CHAIRMAN. Do you solemnly swear to tell the truth, the whole truth and nothing but the truth, so help you God?

Mr. McMILLAN. I do.

TESTIMONY OF EARL R. McMILLAN, MINING ENGINEER, NORTH-WESTERN IMPROVEMENT CO., SEATTLE, WASH.

The CHAIRMAN. Be seated, Mr. McMillan and give your name and connections to the reporter, please.

Mr. McMILLAN. Earl R. McMillan, mining engineer with the Northwestern Improvement Co., which is the coal-operating department of the Northern Pacific Railway Co.

Senator WALLGREN. Would you state your former connections, too, with respect to the manufacture of steel or iron?

Mr. McMILLAN. I formerly was mining engineer of the United States Bureau of Mines, in research work on coal.

Senator WALLGREN. Were you employed at any time by private operators?

Mr. McMILLAN. Yes. I was employed for some months, 1924 and 1925, with the Wilkeson Coal & Coke Co., and during my school time I was employed by the American Steel Foundries in East St. Louis and Granite City, Ill.

Senator WALLGREN. Will you state to the committee your findings in and around—Tacoma, isn't it?

Mr. McMILLAN. Seattle. My headquarters are in Seattle.

Senator WALLGREN. Your headquarters are in Seattle.

Mr. McMILLAN. But my work takes me over the States of Washington and Montana where the Northern Pacific is operating coal mines in both States. But what I wanted to say was that during the past year the Northwestern Improvement Co. and the Wilkeson Coal & Coke Co. and the Dale Coal Co. have been working, in cooperation with the United States Bureau of Mines and the University of Washington, toward developing metallurgical coke suitable for industries already located in the Northwest and others that may be induced to locate in this territory.

As a result of this study and the tests that we have made, we have now definitely determined that coke suitable for practically every metallurgical industry now or likely to be established in the Northwest can be made from Washington coals.

We have experimented with coal from each field separately and in combinations, or blends, in order to meet specifications that were given to us by different metallurgical industries. For example, we have developed a coke that will meet the requirements of all of the ferro-alloy plants that we know anything about, the calcium-carbide industry, and, of course, the iron-blast-furnace industry.

I am sorry I didn't get to hear Mr. Evans' testimony this morning on the available tonnages of coking coals, but I hope what I have said will supplement what he has given.

We have made some careful surveys and arrived at estimates that we think are conservative, and we can say that there is not less than 100,000,000 tons of suitable metallurgical coal—rather, I will put it this way, 100,000,000 tons of coal suitable for manufacture of metallurgical coke. There probably is considerably greater tonnage than that.

Senator WALLGREN. Where is this coal located?

Mr. McMILLAN. The greater part of this tonnage is located in Pierce County, which is on the west side of the mountains and

within 30 miles of tidewater. There is an additional 25 to 50 million tons in Kittitas County, on the east side of the summit, about 90 miles from tidewater.

I might say further that we are now developing plans for the erection of a plant at Tacoma for the manufacture of coke, primarily for present consumers in this territory—metallurgical coke. We expect to finance this plant largely through the help of the R. F. C. That matter is now going through the routine channels.

Senator WALLGREN. How will that coke be used?

Mr. McMILLAN. That will be used by the Ohio Ferro-Alloys Co. of Tacoma, which is already established in a new plant.

Senator WALLGREN. Where do they get their raw materials—their iron?

Mr. McMILLAN. Well, their coke supply comes from Utah entirely at the present time. I don't know where their metal comes from. Then the Pacific Carbide & Alloys Co., of Portland, manufacturing calcium carbide, and probably will go into ferro-alloy manufacture; Seattle Gas Co., sugar plants, and various foundaries in the Puget Sound area. There is a certain tonnage of domestic coke used, which we expect to furnish. The plans for this plant, however, were developed before the idea of an iron blast furnace was given very serious consideration, but, if we can get a blast furnace established in this area, we will expand our coke plant to furnish coke required by the blast furnace.

Senator WALLGREN. You figure, then, that it is possible for you to furnish coke to supply a blast furnace?

Mr. McMILLAN. Entirely; yes, sir.

Senator WALLGREN. All from local coal?

Mr. McMILLAN. Entirely from Washington coal.

Senator MEAD. What is the capacity of your coke-producing plants now, here in this State? Have you any idea?

Mr. McMILLAN. There are at present no metallurgical coke-producing plants, as such, in this State. The only coke being produced is that resulting as a byproduct from gas-making plants in some of our larger cities.

Senator WALLGREN. You have no coal output now?

Mr. McMILLAN. None from the Wilkeson field, but we have from the Roslyn field.

Senator WALLGREN. How great is that?

Mr. McMILLAN. Fifteen hundred tons a day.

Senator MEAD. How much are you taking away now from there, a day?

Mr. McMILLAN. Roslyn?

Senator MEAD. Yes.

Mr. McMILLAN. Fifteen to eighteen hundred tons a day from this one mine. We produce about 4,000 tons a day in the Roslyn field from our own mines, largely for railway fuel.

Senator WALLGREN. Have you any idea as to how much coke would be consumed in, let's say, a \$12,000,000 blast furnace?

Mr. McMILLAN. It depends on the number of furnaces.

Senator WALLGREN. Well, I don't know how many you can build for that amount of money.

Mr. McMILLAN. I don't know either.

Senator WALLGREN. What you might call an adequate blast furnace.

Mr. VANDERVEER. It would be a 1,000-ton-a-day plant.

Mr. McMILLAN. A 1,000-ton-a-day plant would require approximately 1,000 tons of coke a day.

Senator WALLGREN. How many did you say you could furnish a day from your Roslyn plant?

Mr. McMILLAN. Fifteen hundred tons.

The CHAIRMAN. How many tons of coal does it take to make a ton of coke?

Mr. McMILLAN. About 1½ to 1.6 tons, approximately.

Senator WALLGREN. In other words, the output of your Roslyn plant could keep a blast furnace going?

Mr. McMILLAN. If necessary.

Senator MEAD. Is there any large volume of coke shipped into the State from other States?

Mr. McMILLAN. No; not in terms of blast furnace tonnages, but practically all the coke that is consumed now is shipped in.

Senator MEAD. Is what?

Mr. McMILLAN. Is shipped into this territory.

Senator MEAD. All the coke that is consumed is shipped into the territory?

Mr. McMILLAN. Practically all of it. There is very little coke produced in the State at the present time except as a byproduct from some of the gas-producing plants, and that is used locally, mostly as domestic fuel.

The CHAIRMAN. That is all.

Senator WALLGREN. Thank you.

Call Mr. Davis.

The CHAIRMAN. Mr. Davis, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. DAVIS. I do.

TESTIMONY OF E. L. DAVIS, PRESIDENT, WASHINGTON NICKEL MINING & ALLOYS CO., CASHMERE, WASH.

The CHAIRMAN. Be seated, Mr. Davis, and give your name and connections to the reporter.

Mr. DAVIS. E. L. Davis, president of the Washington Nickel Mining & Alloys Co., Cashmere, Wash.

Senator WALLGREN. You just go ahead and make whatever statement you wish to the committee.

Mr. DAVIS. We have a very large deposit of hematite iron ore on the east side of the Cascades, on Blewett Pass.

Senator WALLGREN. That is about 30 miles from here.

Mr. DAVIS. No; that is farther than that. This ore contains chrome and nickel.

Senator WALLGREN. About how far is this from the location of your field?

Mr. DAVIS. From Seattle it is about 90 miles to the property.

Senator WALLGREN. On the east slope of the Cascade?

Mr. DAVIS. Just over the top, on the east slope. It is 15 miles from the Great Northern Railroad, on a downhill slope all the way, on this highway. The highway crosses the property.

Senator WALLGREN. Have you drilled your property?

Mr. DAVIS. We haven't diamond drilled. We have only opened it with tunnels and cuts.

Senator WALLGREN. That is sufficient prospecting, isn't it?

Mr. DAVIS. That is right. The estimated tonnage in sight by engineers is 500,000 tons. The estimated tonnage to the floor level, that is the highway level and not below, is 100,000,000 tons. The 500,000 tons is easily seen by anyone. One doesn't have to be an engineer to estimate it. All he has to do is to cover the property himself and see it.

We have stripped the property on one side, and then we have cut dikes through it and faced it. We have smelted quantities of this ore. It will run from 40 to 52 percent metal, that metal running from 1 percent to 2.33 in nickel and as high as 6 percent in chromitum. The metal extracted will run as high as 687 Brinell hard; 600 is chisel steel.

We govern the hardness of the metal entirely by limestone. We can make the metal as soft as we like. We control it by taking out the silica. Taking out the silica, you harden the metal. Leaving it in softens it, and still you have your chrome and your nickel.

The CHAIRMAN. On what basis of cost would you make this iron?

Mr. DAVIS. Well, our cost has been about \$19 a ton.

The CHAIRMAN. Can you make it any cheaper than that?

Mr. DAVIS. We could in larger productions; yes.

The CHAIRMAN. It costs about \$15 a ton at Pittsburgh.

Mr. DAVIS. Yes; but we have a steel instead of a pig. Do you see the point? Instead of a soft pig iron, we can produce a straight steel without a remetal or adding anything to it.

The CHAIRMAN. It comes out naturally on account of the ore metallic content?

Mr. DAVIS. That is right. I have a quantity of the steel with me today. If any of you gentlemen afterward would like to see it, I would like to show it to you, or anyone.

We have tests—I have copies of them with me—made here in Seattle.

The CHAIRMAN. What would it cost you to lay that down at the water, on the boat?

Mr. DAVIS. Which, the ore itself?

The CHAIRMAN. No; the finished steel product.

Mr. DAVIS. The finished steel product? Well, the freight from over there wouldn't be very much. I imagine—well, I know I can ship the ore over here for about \$1.75 in small quantities. In larger quantities the Great Northern promised a much better rate. But on the metal itself, I don't know how much different the rate would be on that. That is something I haven't—

The CHAIRMAN. That is \$1.75 a ton?

Mr. DAVIS. That is for ore. That is right.

Senator WALLGREN. What is preventing you from expanding over there?

Mr. DAVIS. Nothing, only the money. That is all.

Senator WALLGREN. Have you sought money through the R. F. C.?

Mr. DAVIS. We have been seeking private capital. We are not promoting, we are not selling stock. I stopped selling stock when I went

into the company a year ago. I am trying to do the job in just one straight—

Senator WALLGREN. How much money do you need for it?

Mr. DAVIS. That will, of course, depend on how large a plant we want to put in. I would say we would need, to do this job, around \$500,000.

Senator WALLGREN. Have you at any time tried to obtain financial assistance from the R. F. C.?

Mr. DAVIS. I have not. Mr. Levy asked me to make application there, and I haven't done it yet. I have had some other matters, so that I haven't followed that up.

Senator WALLGREN. I suggest that you do that.

Mr. DAVIS. All right. If you want any data left with you, I will be glad to do that.

Senator WALLGREN. You can leave what you have with the stenographer and she will file it with the record.

(A copy of the tests referred to was marked "Exhibit No. 113" and is included in the appendix on p. 2269.)

Senator WALLGREN. Is there anyone else that desires to make a statement? We don't want anything in repetition of what has already gone on. Does anybody have anything new to offer here?

Mr. VANDERVEER. Mr. Nethercut.

The CHAIRMAN. Mr. Nethercut! Do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. NETHERCUT. I do.

TESTIMONY OF GEORGE E. NETHERCUT, BUSINESS REPRESENTATIVE, STEAMFITTERS UNION, SEATTLE, WASH.

The CHAIRMAN. Give your name and connections to the reporter.

Mr. NETHERCUT. George E. Nethercut, business representative of the Steam-Fitters Union.

Gentleman, maybe I misunderstood you. I don't know anything about the process of manufacturing steel, but I do know the reactions that happen when industries that are built up in this community don't function. In regards to the last war, when they shut down the shipyards, many organizations that were going concerns, in great numbers, faded away like snow before a June sun. Boilermakers, for instance, had 19,000 members, and in less than 2 years they had 150. My organization had 1,500 and went down to 110 in 18 months.

The CHAIRMAN. What is the membership now?

Mr. NETHERCUT. My membership now is about 800, and I am working about 400 extra men on a temporary card, to find their ability. But we have been able to fill all the needs placed on us. We have had shipyards going here for several months and not a foot of pipe has been put into the ships. The ships aren't built yet, and we have been told from time to time that there is a lack of material and an inability to get steel to build the ships. We can't pipe them until they get the steel to build the ships. That also applies to the shortage of pipe on these Alaska jobs. We had hard work getting that. It has been held up.

Senator WALLGREN. That will be all.

Mr. VANDERVEER. May I ask a question? How many pipefitters are employed in proportion to other laborers on shipbuilding?

Mr. NETHERCUT. Well, it depends on the type of ship and how big a hurry they are.

Mr. VANDERVEER. Well, I mean, are you employed in considerable numbers?

Mr. NETHERCUT. Yes; I should judge probably at least 15 percent.

Mr. VANDERVEER. During the last war where were you employed?

Mr. NETHERCUT. I was 2 years, a little bit over 2, with Skinner & Eddy, and I was a year at the Mecham Babcock plant.

Mr. VANDERVEER. In what capacity?

Mr. NETHERCUT. In Skinner & Eddy I was "straw boss" and had the installation of the deck machinery.

Mr. VANDERVEER. Those are both shipbuilding plants?

Mr. NETHERCUT. Yes. At the other one I was foreman of the pipe shop.

Mr. VANDERVEER. Have you been in any of the eastern shipbuilding plants?

Mr. NETHERCUT. Yes. In 1938 I had occasion to visit several yards in the east.

Mr. VANDERVEER. What climatic advantages do we have on the coast in shipbuilding?

Mr. NETHERCUT. They are unexcelled.

Mr. VANDERVEER. Explain it to the committee, please.

Mr. NETHERCUT. You can work in the shipyards here practically the year round, with either canvas gloves or barehanded. The little rain we get doesn't stop operations.

The CHAIRMAN. I understand these rains don't wet and the Los Angeles sun doesn't heat anything.

Dr. Raver, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Dr. Raver. I do.

TESTIMONY OF PAUL J. RAVER, ADMINISTRATOR, BONNEVILLE POWER ADMINISTRATION, PORTLAND, OREG.

POWER AVAILABLE FOR ALUMINUM PRODUCTION IN NORTHWEST

The CHAIRMAN. Be seated, Doctor, and give the reporter your name and connections.

Dr. Raver. Paul J. Raver, Administrator of Bonneville Power Administration.

The CHAIRMAN. Doctor, are you familiar with the attempts that the Government has been making to get a means to stop the aluminum shortage?

Dr. Raver. Yes, sir; as far as the attempts that have been made in the Northwest.

The CHAIRMAN. Well, that is what I mean. You are familiar with the fact that the Reconstruction Finance Corporation has financed several plants for the purpose of producing aluminum?

Dr. Raver. I understand that is true.

The CHAIRMAN. I wish you would tell this committee just how that effort is progressing and what is holding it up, if anything.

Senator WALLGREN. I might say, first of all, Mr. Chairman, that this last week Dr. Raver made a statement to the press where he was quoted—

The CHAIRMAN (interposing). We want him to make that statement voluntarily, without leading him along. I want him to make that statement to this committee, if he will. Proceed.

Dr. RAVER. Well, I think the way to proceed, Mr. Chairman, perhaps, is for me to explain to some extent the statement that I made in the press.

The CHAIRMAN. I want you to explain the situation as it exists, so far as aluminum is concerned, in this Northwest territory.

Dr. RAVER. I will be glad to do the best I can on that.

The CHAIRMAN. Proceed in your own way, and then we will ask you some questions when you get through.

Dr. RAVER. I would like to refer to some notes that I have made and indicate to you that our files and letters and correspondence which are back of the statements that I will make are available to you, if you care to have them, or anything in our records, as far as that is concerned.

The CHAIRMAN. Thank you very much.

Dr. RAVER. May I refer, in beginning my discussion, first of all, to the report which this committee has already made as of June 26, 1941, which indicates that the committee is already familiar with the handling of the aluminum problem up to that date, and with the fact that the extent of this Nation's aluminum shortage was at first not recognized by the Aluminum Co. of America or by officials in charge of our defense program.

The CHAIRMAN. Why do you think the Aluminum Co. of America was so obtuse in its recognition of that shortage?

Dr. RAVER. Well, I haven't any knowledge as to why it was. It may be that none of us recognized the seriousness of the program that was facing us. I don't know but, certainly, your report indicates that it was not recognized.

The CHAIRMAN. It undoubtedly was not recognized or we wouldn't be in the position we are in right now.

Dr. RAVER. Or, if it was recognized, it was not made known.

The CHAIRMAN. Nothing was done about it, anyway.

Dr. RAVER. And, as your committee report points out, also, it was not until February of this year that the existence of that shortage was actually admitted, and it was not until the O. P. M. finally revised its estimates in May that the full extent of that shortage was realized.

During the latter part of May the officials of the Office of Production Management asked the Department of Interior for a statement of the amount of power available in projects under the supervision of the Department of the Interior, the statement to be based, of course, on the earliest times at which new aluminum production plants could be constructed and put in operation, using those available power resources. The Interior Department promptly called upon us out here for that statement with respect to the supplies of power from the Bonneville and Grand Coulee Dams, and on June 2, 1941, our statement was sent to the Department. That statement showed that we had approximately 143,000 kilowatts of capacity which could be or would be made available for defense needs, at Bonneville and Grand Coulee Dams on or after January 1, 1942, and that approxi-

mately 250,000 kilowatts could be made available for this purpose, from these two dams, by May 1, 1942.

On the following day, that is June 3—I am interested here in giving you these dates—there was a conference between officials of the Department of the Interior, representatives of the T. V. A., and of the O. P. M., which is referred to in your committee's report, I believe, of June 26, 1941.

Following this conference, the Department submitted to the O. P. M. a complete tabulation of the power available in the West and in the South for these purposes. The Office of Production Management stated that all of the power shown in the Department's tabulation would be required for defense uses, and they stressed the necessity and urgency for speed in making those power resources available.

Senator WALLGREN. Is this total amount dependent upon additional generators over at Coulee?

Dr. RAVER. It is. The schedule we submitted depends upon the installation of additional generators at Coulee and also at Bonneville Dam.

Senator WALLGREN. How long would it take to install those generators?

Dr. RAVER. Well, it takes about 18 months to get a generator for Grand Coulee manufactured, and it takes another 6 months to install it, so there is 2 years.

Senator WALLGREN. But those generators are practically ready to install now, aren't they?

Dr. RAVER. That is right. The generators we offered to have available are being installed at the present time at Grand Coulee and Bonneville.

Senator WALLGREN. They would be ready when?

Dr. RAVER. The schedule of installation of additional generating capacity at Bonneville—we will have an additional 54,000-kilowatt generator there on September 5, or thereabouts.

Senator WALLGREN. Of this year?

Dr. RAVER. Of this year, and one other 54,000-kilowatt generator some time after December 1 of this year, or shortly thereafter. At Grand Coulee Dam we will have one 108,000-kilowatt generator available sometimes before October 1; another 108,000-kilowatt generator about December or January 1, and a third some time in the early spring of 1942.

The CHAIRMAN. Will you have all the power available that you agreed to furnish, for the purposes of aluminum production, ready, when it is time to be used for that purpose?

Dr. RAVER. Yes, sir. We agreed to provide this capacity, about which I am now speaking, by the time these new aluminum plants would be ready.

The CHAIRMAN. Then there would be no delay so far as power is concerned, when these people get ready to produce, if they do get ready to produce?

Dr. RAVER. That is correct, providing we can get our substation and transmission facilities, which are just as important as the generators, installed by the time those plants are ready, and that is my concern about the delay.

Senator WALLGREN. They don't take as long to install though.

Dr. RAYER. It takes at least 6 months to install a transmission line and substation facilities, providing we have the equipment available. Our difficulty now is bottlenecks in getting equipment. We have to plan in advance, much in advance, of the actual delivery date because of shortages of certain materials.

Senator WALLGREN. But your plans are all set to furnish the power.

Dr. RAYER. They have been, on these dates we indicated.

The CHAIRMAN. Proceed with your statement.

Dr. RAYER. Well, as I have indicated, the O. P. M. stressed the need for speed on this, and we went to work, thinking that speed was essential and that we would be in a position to proceed quickly. They asked us to proceed with our contract discussions with the officials of the Defense Plant Corporation; that is, these were to be Government-owned plants, and our contracts would therefore be with the Defense Plant Corporation of the Government, for the supply of power to these plants.

The Defense Plant officials indicated their readiness for such discussions and, accordingly, the department wired me to that effect on June 4. Only 2 days had expired so far from the time we really started.

The Bonneville staff officials immediately took an airplane to the East and were in Washington ready to meet with the Defense Plant representatives on June 5. On June 6 our representatives met with these officials and also with officials of the Office of Production Management in the offices of the Defense Plant. At this meeting there were present Mr. Cortesi and Mr. Jones representing the Office of Production Management.

The CHAIRMAN. That wasn't Jesse Jones?

Dr. RAYER. I don't know the initials of this gentleman.

The CHAIRMAN. I just wanted to be sure it wasn't Jesse.

Dr. RAYER. These gentlemen stated that all of this production of additional aluminum, which we had offered to provide power for, should be in a single aluminum plant. This would have meant that we would have had in the Northwest two large aluminum plants, one which is now in operation at Vancouver, of the Aluminum Co. of America, which has a capacity of about 165,000,000 pounds of aluminum per year, and another one of similar size at some other place in the Northwest. We protested against having this additional block of aluminum concentrated in one plant. We had a number of reasons for protesting it. We felt that from an operating point of view, certainly Bonneville could provide this capacity much more efficiently and at less cost and with much better operating conditions if this load was distributed over our transmission system instead of being concentrated at one spot. We recommended that the power load be divided up into at least three aluminum plants instead of concentrating it in one.

In the second place, we have some responsibilities under the Bonneville Act for the development of this region, and we felt, from the regional point of view, it was better to decentralize this large industry rather than concentrate it at one point, to give a better balance to the economy of the region.

We also felt that, from a national-defense point of view it was objectionable to concentrate these very important large loads in one spot. As I say, our representatives gave a number of reasons for objecting to this concentration.

Then the monopoly implications of the single-plant location also struck us rather forcibly. It was apparent and, indeed, it was asserted by the officials of the Office of Production Management that the Government would have to have so vast a plant operated and managed by the Aluminum Co. of America, since only that company, according to these officials, had the requisite skill and managerial ability to run a plant of that size. Moreover, after the war emergency is over and production for defense is curtailed, the Government plant or plants will presumably stand idle unless private concerns take them over and run them. In other words, these Government plants will be real war babies after this emergency, unless they are now designed and planned, in their installation, in such a way as to enable private capital to take them over and continue to operate them after the war emergency is over.

From a monopoly point of view—this is my own opinion, for whatever it is worth—it seems to me that if we have several plants out here, operated by independent operators, we have a much better chance of those plants continuing in operation after the emergency is over than we do if the entire operation is under the control of the present monopoly that controls that business in the United States. For example, the Aluminum Co. operates plants in many other parts of this country, even in Canada. If they control the entire aluminum production in the Northwest it will be their choice, when this emergency is over, as to what plants will continue in operation, and the Government, not having developed any other operators, will be at their mercy in that decision.

Now, as I say, that is merely a personal observation. I have nothing to do with that except that as Administrator of this project, with certain responsibilities under the Bonneville Act to develop this region, I am vitally concerned to see that we don't have war babies on our hands out here, that we develop this whole production program insofar as it is at all possible to do it, in a way—

The CHAIRMAN (interposing). Well, you are instructed in that Bonneville Act, aren't you, not to foster monopoly?

Dr. RAVER. That is right. There is a specific instruction in the Bonneville Act against that. So that as Administrator, I think I do have some responsibilities to the people of this region and to Congress on this monopoly question.

Consequently, as I said, we protested against the concentration of this entire load in one plant to the O. P. M. officials, for these various reasons.

Senator MEAD. You no doubt recall the experience of Muscle Shoals after the last war.

Dr. RAVER. Yes, sir; and I don't want this to be a Muscle Shoals after this war is over, and I know none of you do, as far as that is concerned.

In answer to these considerations which we gave to Mr. Cortesi and Mr. Jones of the O. P. M., they told us that a single plant was necessary, as I say, because there was a lack of supervisory and managerial personnel to operate more than one plant. They explained that every new plant would have to be managed and staffed largely by persons drawn from among the present employees of the Aluminum Co. of

America, and that that company cannot spare enough of its present employees to staff more than a single new plant in the Northwest.

Mr. Cortesi and Mr. Jones admitted frankly that their conclusions as to the shortage of supervisory plant officials were based solely on the representations of the Aluminum Co. of America. Now, obviously, that company has an interest in holding down the availability of supervisory and technical employees in this business if they are to preserve their monopoly position. Certainly, it seems to me that we should not depend entirely upon that company or their opinion as to what supervisory and technical ability we have in this country to run these plants.

Now, our representatives spoke of the availability of qualified plant managers and supervisors, outside of the present employees of the Aluminum Co. of America. They mentioned, for example, that the Reynolds Metals Co., which has been brought into the picture in the Northwest, and also in the T. V. A., has certain facilities for training additional men. They also mentioned the fact that certain interests here have brought in managers from outside of the country. I understand Mr. Eichelberger is to testify before this committee.

The CHAIRMAN. He is.

Dr. RAVER. He represents the Olin interests that have been interested for a long time in developing processes for the treatment of clays and alunite, which have possibilities of becoming very important sources of supply for aluminum. That company has been able to secure managers for these plants from outside of the United States. I think they have here today Norwegians who have actually operated these plants in foreign countries—Japan and other places.

But even if we assume that some of Alcoa's employees would have to be called upon to do this job, it is not clear to us that that would impair, necessarily, Alcoa's ability to carry on its own operations.

While these matters were being discussed, some of our people in Washington had an opportunity to discuss this whole problem of getting managers for these plants with Mr. I. W. Wilson, who is vice president of the Aluminum Co. of America. Mr. Wilson was exceedingly vague in his statements regarding the number of supervisory officials required for a new aluminum plant, although he did agree that only a few, perhaps not more than a dozen such officials, were brought out here by the Aluminum Co. of America to run this tremendous new plant of theirs at Vancouver, Wash. But the shocking thing about the discussion with Mr. Wilson was his own admission that Alcoa had not undertaken any apprentice or training program designed to increase the supply of competent plant officials. Now, if this company—

The CHAIRMAN. When did he make that statement?

Dr. RAVER. Well, it was, I presume, some time in June. I don't have the exact date here.

The CHAIRMAN. That is while you were back there on this conference in June?

Dr. RAVER. That is right, while our people were there.

Senator MEAD. Of course, that is an essential protection for a monopoly.

Dr. RAVER. That is correct. I mean, when you take that kind of a statement and put it together with the statement that this company is

vitaly concerned, patriotically, in producing and increasing aluminum production and yet has taken no steps to supply competent officials to run additional plants to take care of this production, just a layman like myself begins to have some questions as to the sincerity of the patriotic statements made by these officials. Obviously, if there is to be a tremendous expansion of aluminum production, and this company is expecting to do it all themselves, they should be training managers to take care of these additional plants.

Now, these discussions which, as I said, began in a conference on June 5 in the Defense Plants offices, continued at intervals in the days that followed.

There were further meetings with O. P. M. officials on June 6, and on June 10, as well as frequent telephone conversations. In the meantime, we were getting ready out here. Our engineers were making studies of what would be required in the way of additional facilities to serve these plants. We had to get out specifications. We had to put our specifications out for bids, buy equipment. We had to consider the whole question of priorities, which has become a very serious question for us, particularly in the construction of some of these transmission lines, where we have depended upon aluminum and find now that we can't get aluminum cable and have to use copper cable instead of aluminum. That is, it has required a complete change in specifications, of design of line. It is raising some serious cost questions because we are finding that, to provide power in such capacities as we need for these plants, we have to have cables that will carry that capacity, and to go to copper cable for that is increasing our line construction costs tremendously. I can give you some of the figures on that, if you are interested, a little later.

The CHAIRMAN. We would like to have those figures for the record.

Dr. RAYER. Well, I can give you an example, if you will permit me to.

The CHAIRMAN. Well, you can put them in later. I would rather you would proceed with this chronological statement of yours without interruption, and then we will put that in at the end of the statement.

Dr. RAYER. You understand that increase in cost, unless it is taken care of by the Government as a national-defense cost, may seriously jeopardize our \$17.50 basic rate structure, and the people of the Northwest have a vital interest in maintaining that rate structure.

After studying all these factors, our engineers concluded that if we had full cooperation and we were able to obtain prompt action from the O. P. M. and the Defense Plant Corporation, the R. F. C., or whoever is concerned, as well as the private operators who are to run these plants, Bonneville could deliver 32,500 kilowatts in the Tacoma-Covington area by February 1, 1942, and could deliver the balance of the power required at Grand Coulee by the same date, or at Spokane by March 1, 1942, or we could deliver it in the Tacoma-Covington area and at Spokane and at Cascade Locks by April 1, 1942. In other words, we could take care of the whole job at those locations on these dates.

It should be understood, however, that our ability to meet these dates depended upon our ability to act quickly in ordering equipment, to take advantage of the favorable construction conditions existing during the summer and early fall.

Now, if this is the beginning of our rainy season, for example, this rain here today, our construction program is definitely delayed, because we haven't been able to start yet and we can't build these lines and work in the mud as quickly and as expeditiously as we can during the summer period.

The CHAIRMAN. It does wet through, that rain.

Dr. RAVER. So the weather conditions were important to us in making this promise. We had to have a certain amount of good weather in our construction period in order to meet these dates.

On June 17 these conclusions were sufficiently definite to permit Bonneville to commit itself to make deliveries at the time and places indicated, 32,500 kilowatts at Tacoma, 65,000 kilowatts at Spokane, plus an additional 35,000 kilowatts at Spokane for magnesium, and 65,000 kilowatts at Cascade Locks.

Accordingly, on that date a letter was addressed to Mr. William L. Batt, Deputy Director, O. P. M., stating in part, as follows:

As we told you last week, we believe that the quickest way to get new aluminum facilities in production in the Northwest is to locate a 30,000,000-pound plant in the Tacoma-Covington area, a 60,000,000-pound plant at Cascade Locks and a 60,000,000-pound plant at Grand Coulee or Spokane.

We believe that 32,500 kilowatts for either the Tacoma-Covington plant or for the Cascade Locks plant could be available by February 1, 1942. The balance of the power could be available at Grand Coulee by February 1, 1942, or at Spokane by March 1, 1942, and at Tacoma-Covington and Cascade Locks by April 1, 1942.

Senator WALLGREN. When did you make that report?

Dr. RAVER. That was on June 17. That was just about 2 weeks from the time that we started. We were in a position, with all of our studies, to indicate what we could do. During the week that followed, Bonneville—

Senator WALLGREN (interposing). Pardon me, could you still build them and have them in operation by that time? Or is that 2 months' lost?

Dr. RAVER. I am afraid not.

Senator WALLGREN. In other words, this 2 months' delay has obstructed this program?

Dr. RAVER. That is right, and, of course, that is my interest in coming here. You are interested in bottlenecks. I think we have got one here, and we are very much concerned about it.

The CHAIRMAN. Proceed. We want to locate it. I am very much interested. I want to get to the meat of this thing. Go right ahead with it.

Dr. RAVER. During the week that followed, Bonneville's representatives in Washington were unable to obtain a definite answer from O. P. M. regarding this proposal. In response to their frequent inquiries, they were told that O. P. M. expected to reach its conclusions shortly and that Bonneville would be advised of these conclusions promptly. In the meantime, of course, valuable days were being lost.

Of course, we couldn't do our preliminary engineering work. You have got to know where the plants are before you can design the lines to go to those plants. We should be putting in concrete foundations in our substations now before the rainy season starts in, but we can't because we don't know where those substations are going to be located. We don't know today where they are to be located.

The CHAIRMAN. O. P. M. hasn't yet made up its mind?

Dr. RAVER. Not so far as we know.

During the latter part of June, Bonneville's two staff officials concluded that they should return to Portland because sufficient progress was not being made.

On July 2, Mr. Bunker, of the O. P. M., advised the Interior Department, by letter, that the Office of Production Management was now definitely planning on 97,000 kilowatts for aluminum production at Cascade Locks and 65,000 kilowatts for aluminum production at Spokane. Those figures are significant. Tacoma was out of the picture at this point.

The capacity which we had offered for Tacoma was now put at Cascade locks, in addition to the 65,000 kilowatts which we had offered at Cascade locks, making a total of 97,000 at Cascade locks, 65,000 kilowatts at Spokane, and none at Tacoma. I acquiesced in the additional capacity at Cascade locks. After consulting with our engineers, it was determined that we could supply 97,000 kilowatts at Cascade locks.

Later on, as you will learn, the O. P. M. experts on site location have determined that there isn't a site at Cascade locks big enough to take a 97,000-kilowatt plant. I am not an expert on that, and I don't know whether that is true or not, but my engineers have no doubt whatever that the site at Cascade locks is ample for the 65,000-kilowatt plant which we offered for that location in the first instance; in fact, we are certain that by moving the highway a 97,000-kilowatt plant is feasible.

Now, at that time, I went back to the O. P. M., having discovered that a plant for Tacoma was out of the picture. As a result of this change in our recommendations, I had my chief engineer come to Washington with me, and we analyzed our whole system characteristics very carefully. We analyzed the surplus power in the Puget Sound region and decided that, by careful planning of our supply and utilizing the back-up of our inter-connections, we could offer the Office of Production Management another 32,500 kilowatts for Tacoma.

I made it very clear to them that Tacoma was the only place on our system where we could offer that additional power, and it is the only place on our system where we could offer it. That brought the Tacoma plant back into the picture, and I understand it is back into the picture now. In other words, we upped our original estimate of the amount of capacity that we could provide for aluminum plants by 32,500 kilowatts. What we did, of course, was take away every semblance of reserves that we have got in our system in order to do it; we will have to depend upon the reserves of the city of Seattle, Skagit development, Tacoma, and other customers of ours with whom we are interconnected, to help us supply that additional 32,000 kilowatts on a firm basis until after 1943 when we will have additional generators in both Coulee and Bonneville to take up the power requirement.

On receipt of this information about the decision of O. P. M. with respect to two locations, Cascade locks and Spokane, Mr. Dittmer of my staff, wrote to Mr. Bunker of the O. P. M. on July 3, pointing

out that the next step for us out here is of vital importance and that is to find out, just as soon as we can, the approximate dates at which the plant in these locations may be expected to be ready to take power.

Mr. Dittmer also pointed out that it was going to be necessary for Bonneville to operate on a very close schedule in completing the construction necessary to render service to the locations decided upon on the dates which we set out in our letter of June 17. I may point out in passing that we have never had an answer to this letter.¹

The CHAIRMAN. How long ago was that letter written?

Dr. RAVER. That was July 3.

The CHAIRMAN. July 3, and this is August 25. This committee will make it a point to find out where the answer to that letter is, when we get back to Washington. Proceed.

Dr. RAVER. We have not received the information requested in that letter.

The CHAIRMAN. We will be back in Washington in September. That will give them 60 days. They certainly ought to have some good reason for that.

Dr. RAVER. Nevertheless, our engineers and procurement officials began at once with the preparation of specifications, invitations to bid covering the equipment and construction work that would be necessary. We began a survey of the line from Grand Coulee Dam to Spokane at once. In the first place, we know where the site of the proposed magnesium plant is to be.

Similar steps were taken wherever it was possible, with respect to service to Cascade locks and the Tacoma plants. In the meantime, we had had no assurance that the Tacoma plant was to go through, although our suggestion had met with a favorable reception from the O. P. M. officials, and we still assume that it will go through.

Purchase and construction contracts couldn't be signed finally, as we don't have the funds to finance purchases. As a matter of fact, we can't take a chance of financing something of this kind until we have got a contract that assures protection of our investment that we make.

These plans for these new aluminum plants did not materialize until long after Bonneville's current appropriation request had been considered by both the House and the Senate, and, because of this situation it had been understood from the start that the Defense Plant Corporation would supply the money necessary for Bonneville's construction of the transmission and substation facilities. Consequently, we can't execute any of our work orders, and we can't execute any of our contracts until we have a contract with the Defense Plant Corporation to provide the money.

It will be recalled that Bonneville staff officials had gone to Washington early in June for the purpose of negotiating a contract with the Defense Plant Corporation. Discussion of the size and location of the Government's aluminum facilities in the Northwest occupied most of June, and no progress was made in the consideration of our power contract.

During the first 2 weeks of July, representatives of the Department of the Interior and of Bonneville pressed the Defense Plant

¹ Dr. Raver subsequently corrected this statement, see p. 2141 infra.

Corporation for prompt consideration of our power contract. Representatives of Defense Plant Corporation indicated that they were ready to proceed, and our general counsel again traveled to Washington, arriving on July 21. He found the officials of the Defense Plant Corporation so overburdened with other responsibilities that they could scarcely spare the time for careful consideration of our power-contract provisions.

On July 23, Bonneville's general counsel was able to meet with members of the Defense Plant staff, and he conferred with them again on July 26 and on August 2. On these occasions, however, the most he was able to accomplish was to point out to the Defense Plant representatives some of the various provisions that would have to be considered when negotiations finally got under way.

Since Defense Plant seemed unready for careful negotiations, Bonneville's general counsel returned to Portland during the first week in August, and he is still here.

During the middle part of July, Bonneville's chief engineer advised me that, while his staff had been proceeding as rapidly as possible with the securing of right-of-way and the design of lines and substations, as well as with the ordering of the necessary materials, the point had now been reached when little more could be done until O. P. M. selects the specific plant sites in the communities designated by Mr. Bunker in his letter of July 2 and in his conversations with me on the same date. Our chief engineer added that further delays in the selection of these sites might cause more than the equivalent delays in Bonneville's completion of the transmission lines and substations. That was because delays at this time will jeopardize our ability to take advantage of several existing contracts which we have for the purchase of large electrical equipment.

As I said, we went ahead to get these contracts and were all ready to execute them, and we have received bids in response to outstanding invitations. If we lose these contracts, as we well may, there will be a considerable additional delay in getting new bids, and we are very much concerned about the priorities situation and commitments on time; the companies are continually extending the time in which we will get deliveries of equipment.

On July 11 we received word that Colonel Weaver, attached to the office of Mr. Patterson, Under Secretary of War, was planning to come to the Northwest to look over available sites, and Colonel Weaver arrived on July 15. This question of the plant site locations is one that we had understood was settled, and now a new man, representing the War Department, comes on the job, quite a qualified engineer, high type of individual in every respect, but we thought the plant site question, as far as general locations were concerned, at least, was settled.

Now there have been indications of new plant sites. Instead of Cascade locks, I understood Colonel Weaver has recommended Troutdale. We are not interested in Cascade locks or Troutdale or any other site, as such. That is, we have no interest in playing favorites to a community. We do have a very vital interest, however, in any shift that is made in the site of a plant, involving the expenditure of millions of dollars, as this proposal does; the shift of that plant to Troutdale will cost the Federal Government, if it is carried out, more

than \$2,000,000 additional expense for the Bonneville transmission system alone.

The objections raised to Cascade locks by Colonel Weaver have been analyzed by our engineers. The one objection that he has, to which we haven't much of an answer, is that Cascade locks hasn't a site large enough to include a rolling mill, that is, to include fabricating plants as well as pig aluminum plants.

Senator WALLGREN. It is anticipated that that particular plant will be operated by the Alumnium Co. of America?

Dr. RAYER. Yes; that is one of the plants to be operated by the Aluminum Co.

Senator WALLGREN. That is about the first indication they have ever made to anyone of us that they are willing to put in fabricating mills in the West, isn't it?

Dr. RAYER. That is correct, and it is one of the things we are very much concerned about, that, even though the Government is now spending the money to put in the plants, we still do not have a commitment from any one of these producers out here that they will put in a rolling mill or fabricating plants to go along with this aluminum production and stop the sending of aluminum pig across the country to be fabricated, and bringing the finished products back.

Senator WALLGREN. That is the closest thing to a commitment you have ever had, I suppose, although it comes to you through the O. P. M., does it not?

Dr. RAYER. There have been implications that we were to get rolling mills out here but there never has been a definite commitment, so far as I know, that assures us we are going to get them, and I think that we are entitled to that assurance. Certainly the Government, if it is going to put in these plants, is in a position to assure the Northwest of what seems to any intelligent observer as an essential part of this expansion in alumnium production. In other words, the Northwest will be in the position that it has been in in the past, of something of a colonial empire, shipping out its raw materials to the East for manufacture, and buying back the finished products and paying the freight both ways. It doesn't make any difference here, if you bring in an industry that uses up one of the natural resources of the Northwest, namely, cheap hydroelectric power, and freezes that great resource into the form of aluminum pig, and then ships it back, you are still shipping your raw material out and buying back the finished product.

The CHAIRMAN. Then you have shut off your source of power so no one else can do it.

Dr. RAYER. That is correct, and that is a very serious problem.

Senator WALLGREN. Right at that point, would you just briefly explain what the power rates are in comparison with the other sections of the country?

Dr. RAYER. Our basic rate is \$17.50 per kilowatt-year which, translated in terms of cost per kilowatt-hour, is 2 mills per kilowatt-hour for customers who can use the power continuously, 24 hours of the day.

Senator WALLGREN. That is the cheapest rate in the country, is it not?

Dr. RAYER. So far as I know, it is the cheapest rate in the country for that quality of power, that is, power available continuously.

Senator WALLGREN. How about the rate of the T. V. A.?

Dr. RAVER. The T. V. A. rate is \$5 or \$6 a kilowatt, I believe, higher than that.

Senator WALLGREN. In other words, we have the cheap power to do the job out here?

Dr. RAVER. Yes; and there is no question but what that is one of the things that is attracting the metallurgical and electrochemical industry to the Northwest, and we are glad that it is. We want to see the Northwest come into its own, with a balanced economy, which can rest very largely upon the light-metal industries, providing some attention is given here by responsible Government officials to making out of this defense effort a development that will fit the regional economy after the defense effort is over.

The CHAIRMAN. That is one of the important things that is staring us in the face, to meet this situation when the emergency ceases.

Senator MEAD. I was interested in trying to determine just about how much of a loss has been already sustained by this delay. I assume that the delay now is somewhat over 2 months in time. Assuming that there was no delay and that we had gone ahead with this program, how much in pounds of aluminum have we lost as a result of this 2 months' delay?

Dr. RAVER. It is difficult to determine the date on which all elements of this problem should have been settled.

Senator MEAD. With the power that would be available, how much aluminum could we produce in a little over 2 months' time?

Dr. RAVER. If the delay, if you can call these 2 months a delay—and I am not in a position to say whether that is true. I don't know how much of this 2 months' time——

The CHAIRMAN (interposing). We are not charging you with that. Tell us how much aluminum we can make in 60 days.

Dr. RAVER. About 30,000,000 pounds, on this program.

Senator MEAD. About 30,000,000. How much, if you recall, I don't, did we collect in our pots-and-pans program? I wonder if that has been off-set by this delay.

Dr. RAVER. I really haven't any data on that.

Mr. FULTON. I think they were trying to collect about 50,000,000 pounds. I don't know whether they succeeded.

Senator MEAD. Well, at any rate, if they did collect 50,000,000 pounds, it won't be long before this delay will have scotched that.

The CHAIRMAN. If they used up all the pots and pans we collected, we would still be behind.

Senator MEAD. They will have to go out for more pots and pans.

Senator WALLGREN. And you could never use them in the construction of a plane.

Senator MEAD. It would lack the quality. It occurs to me that this is becoming very serious because by next March or April we will be at the height of our bomber program, and it is apt to bog down unless those boys in Washington really make up their minds. Because, even if they make up their minds and do it expeditiously, and if we could get into the full swing on this program now, we could hardly be able to be on a production basis by March or April of next year. If they continue to delay and continue to change their plans, we will hardly be in the construction period by next March or April. So it

seems to me as though it is one of the most serious problems growing out of our defense effort.

Dr. RAVER. I think so. On the site question, there has been another development recently. After the controversy over this site at Cascade locks developed, the O. P. M. retained a consulting engineer by the name of Chadwick, who came out here to fix the exact location of these plants for the O. P. M.

The CHAIRMAN. Well, from all the correspondence and all the information that you have got on this subject, do you conclude that the delay has actually been helped along by the Aluminum Co. of America in the hope that they would get control of all this power in this section, for the purpose that we have been discussing?

Dr. RAVER. I don't know that I am in position to reach a conclusion on a charge as serious as that, Senator. I must confess that I have been disturbed about that possibility, particularly in view—

The CHAIRMAN (interposing). Well, it has all the earmarks of a maneuver to turn the aluminum situation over to a monopoly by the O. P. M., from what you have said here.

Dr. RAVER. Certainly, there are some implications of that. And the site situation, as it has developed recently, is disturbing from the same point of view, and I so stated in my press release, namely, I understand, for example, that the Tacoma site, which had already been selected by the people who are ready to go ahead and operate that site, that is, independent operators, has now been selected by Mr. Chadwick, who was accompanied on the trip by the chief engineer of the Aluminum Co. of America.

The CHAIRMAN. Who is Mr. Chadwick? Where did he come from?

Dr. RAVER. I think he is with a New York consulting firm, but I have forgotten the name of it.

The CHAIRMAN. He is a consulting engineer?

Dr. RAVER. Consulting engineer; yes. And the site selected is about 10 to 15 miles away from tidewater. Well, now, I am not an expert on aluminum production but I think any layman knows that a tidewater plant has certain definite advantages over one away from tidewater.

The CHAIRMAN. You don't have to be an expert to know that. Even a Senator can come to that conclusion.

Dr. RAVER. And, as I said in my newspaper release, I was disturbed about that, and I think anyone who is interested in the sound development of the resources of this region in the future, after the emergency is over, would also be disturbed by that.

Senator WALLGREEN. I understand you offered your services to the O. P. M. in the matter of selecting these sites and that you were utterly disregarded, and, instead, they took along a representative of the Aluminum Co. of America to help choose these sites. Is that true?

Dr. RAVER. Yes. We don't feel left out but we did offer our services, the services of our engineers, to Mr. Chadwick, and he indicated that he was appreciative but he didn't need them, and they did not accompany him.

The only reason, of course, we offered the services of our engineers is because we have an interest in where these sites are, from an engineering point of view.

Senator WALLGREN. You have to build the transmission lines.

Dr. RAVER. We have to build the facilities in there and, if there is anything wrong about a site in connection with our problem, we would like to tell him so. That is our only interest in that.

Senator WALLGREN. There isn't any great benefit coming to a community or an area just through the construction of an aluminum plant, though, is there? I mean from the standpoint of employment.

Dr. RAVER. Only as it is the first step toward the final processing of the product of that plant.

Senator WALLGREN. But we have had one plant down there at Portland or at Bonneville, and they have never indicated a willingness to create fabricating plants in the West.

Dr. RAVER. Well, I wouldn't say that because the president of the Aluminum Co. of America has indicated to me that he thought they would have a fabricating plant out here some day.

Senator WALLGREN. The vice president of the Aluminum Co. of America told us back in Washington, told this committee, that he thought it would be a very wise idea to construct fabricating plants out here, but it seems to me that was some time in April. Up to now there hasn't been any indication that they are starting such a program.

Dr. RAVER. May I correct a statement I made just a minute ago? I wouldn't say that the establishment of these aluminum plants here is of no benefit to the Northwest, even though the additional processing does not come. I believe that was implied from my answer to your question. They do add to the jobs and stimulate, perhaps, other business in the Northwest; and, after all, since they bring a big investment in here which is taxable, they add to the tax base of the community and in many ways benefit the community. But the big benefits come from the processing—

Senator WALLGREN (interposing). Fabricating.

Dr. RAVER. Of the aluminum pig.

The CHAIRMAN. Mr. Fulton, do you have any questions?

Mr. FULTON. No; I have no questions.

The CHAIRMAN. Thank you, Doctor.

Mr. FULTON. I think, Doctor, the committee would appreciate it if you would keep it currently informed of these negotiations in Washington. We are going to conduct an examination of them for the purpose of getting an idea as to whether they are following out the recommendations the committee made in June, which they don't seem to be doing.

Dr. RAVER. I will be glad to do that. I might say that I have had no official information as yet from the O. P. M. as to what sites are actually selected as a result of Mr. Chadwick's visit.

Senator WALLGREN. From present indications it would appear that these plants that have been discussed lately by the O. P. M. are to be operated by the Aluminum Co. of America. Is that right?

Dr. RAVER. I understand the Aluminum Co. of America is to operate the plant in Oregon, whether it is Cascade Locks or Troutdale or wherever it is, and that the Union Carbide & Carbon Co., unless they have changed their decision, will operate the plant at Spokane, and that the Olin interests will probably operate the plant at Tacoma. I

haven't any official communication about that. I am merely telling you my understanding of what the decision is.

Senator WALLGREN. How soon will the Reynolds Co. be in production?

Dr. RAVER. They have already started baking out the pots—that is the first step in going into production—and they will be in production with 30 pots in about a week.

Senator WALLGREN. What are they using for their basic material, bauxite?

Dr. RAVER. Yes.

Senator WALLGREN. Where are they getting it, do you know?

Mr. FULTON. From South America.

Dr. RAVER. Bauxite supplies generally come from Dutch East Indies and Dutch Guiana. There are some supplies in Arkansas.

Senator WALLGREN. But they are pretty well controlled by the Aluminum Co. of America?

Dr. RAVER. That is my understanding.

Senator WALLGREN. Do you know whether or not the Reynolds Co. have any bauxite in this country?

Dr. RAVER. Not that I know of.

Senator WALLGREN. In case South America were shut off the Reynolds Co. would be dependent upon Arkansas for bauxite, and that bauxite is controlled by the Aluminum Co. of America.

Dr. RAVER. I imagine that is true. I am not entirely familiar with the supply situation. Perhaps Mr. Bloch could answer that.

Mr. BLOCH. That is correct.

Senator WALLGREN. These new companies, do they intend using the raw materials of the West, such as alunite?

Dr. RAVER. The company that is interested in putting a plant at Tacoma is interested in developing alunite to supply alumina for the production of pig aluminum.

The CHAIRMAN. That is the Olin company?

Dr. RAVER. That is the Olin company. The Olin company is the only one that, so far as I know, is interested in that process.

The CHAIRMAN. The other two companies would have to import their raw material?

Dr. RAVER. Yes, sir.

The CHAIRMAN. That is all, Doctor. Thank you.

Mr. Eichelberger, do you solemnly swear to tell the truth, the whole truth and nothing but the truth, so help you God?

Mr. EICHELBERGER. I do.

TESTIMONY OF FRANK EICHELBERGER, PRESIDENT, KALUNITE, INC., SALT LAKE CITY, UTAH

ATTEMPTS OF KALUNITE, INC., TO ESTABLISH NEW ALUMINUM PLANT IN NORTHWEST

The CHAIRMAN. Take that seat, Mr. Eichelberger, and tell the reporter your name and connections.

Mr. EICHELBERGER. Frank Eichelberger. I am president of the Kalunite, Inc.

The CHAIRMAN. Mr. Eichelberger, you are somewhat interested in this Tacoma site and in the manufacture of aluminum from this deposit in Utah. Are you not?

Mr. EICHELBERGER. I am, definitely.

The CHAIRMAN. Well, if you would oblige this committee by telling us some of the obstructions that have been put in your way, we will appreciate it. We want you to describe your process first, and then tell us why you haven't been able to go to work.

Mr. EICHELBERGER. This process will make alumina from high aluminous clays, or alunite, or low-grade bauxite. We have tried all of them. It started—and I went with it—11 years ago, and during that time we had expended a large amount of money, have built a rather semicommercial pilot plant.

The CHAIRMAN. Where is that plant?

Mr. EICHELBERGER. At Salt Lake City, Utah.

The CHAIRMAN. I expect to see that plant next week.

Mr. EICHELBERGER. I hope I am there with you. After we had made alumina, we then made aluminum, to prove that our product, alumina, could make commercial or better aluminum.

This process is a dilute-acid process, capable of treating any aluminous material, of which the aluminum content is soluble in sulfuric acid. There is nothing new in the process, except one discovery. During the last war Mr. Pederson of Norway made aluminum from clays. We have been able to shorten his process about two-thirds.

When Germany, in 1933, had no bauxite, they made their alumina, to the extent of 168,000 metric tons, from clays.

The making of alumina from alunite is not experimental except in this country. At the present time all of the alumina produced in Chosen and Manchukuo—

The CHAIRMAN (interposing). Those are the Japanese colonies on the continent of Asia?

Mr. EICHELBERGER. Japanese colonies; yes. Are made from alunite, and the metal produced from that alumina, made from alunite, averages 99.7 percent pure, which is better than any commercial aluminum sold in the United States today.

I believe the process will be commercially competitive with the Bayer process now used.

Mr. FULTON. Will you tell us why?

Mr. EICHELBERGER. Yes, sir. In 1939 the Aluminum Co. sent out to our plant a man by the name of R. S. Sherwin, who was the alumina expert of the Aluminum Co. of America and now is the expert for the Reynolds Metals Co. He came out to our plant in March 1939, went through it, when we were operating, carefully went through all the costs of production, on the statement that, if we could prove to his satisfaction that we could produce alumina without credits for by-products, which I will go into, under \$30, they would be intensely interested. I have his report, and it is a little under \$29. With this alumina we put in the cost of producing a half-ton, practically, of potassium sulfate, about a quarter of a ton of sulfuric acid, although they were not given any credit. No one knows the Aluminum Co.'s cost for producing alumina. They couldn't bring it out in the 2

years' trial of their monopoly. Have you ever been able to find out, Mr. Fulton?

Mr. FULTON. No; they simply said they thought it would be about the same as the Reynolds, about 12 cents a pound.

Mr. EICHELBERGER. That is for aluminum. I think costs have gone up since Mr. Sherwin's report, which is signed, and that report was made because we wanted the Aluminum Co. to take our alumina and run it through their pot line to dissipate several bugaboos which they said would make our aluminum no good because it had potash in it. They didn't do this; they didn't stick to their word. So we erected our own plant at Battelle Memorial Institute. We made aluminum by the Allgemeine Geschellschaft Aluminum Neuhausen, and they produced aluminum 99½ percent pure metal—aluminum is quoted at 99 percent—and recommended the process highly, and we were going together, they to operate the aluminum plant and we the alumina plant, but Mr. Hitler tapped them on the shoulder.

I went down to, I think it was called, the Defense Administration in September 1940. At that interview was Mr. Bloch and Mr. Folsom, young Mr. Batt and Mr. Leeth.

The CHAIRMAN. We had Mr. Folsom and Mr. Batt before this committee.

Mr. EICHELBERGER. They told me there was lots of aluminum for every purpose.

The CHAIRMAN. They told everybody that in 1940, and all the way up until February 1941, I think, they were saying it.

Mr. EICHELBERGER. Senator Truman, we didn't ask them for a dime. We didn't ask for anything except for the privilege of being allowed to do this and get a certificate of necessity, and we were politely asked out. I stayed around a couple of months, trying to do that. I am not a lobbyist; I am an engineer—I hope. I was called back in March of this year by the Bonneville Power Administration people because we were trying to get a power contract. We even then were silly enough to think we could go on.

On March 7 I wrote a letter to Secretary Ickes, after conferring with the Bonneville people, and Under Secretary Wirtz, telling them we were desirous of building a plant to produce 60,000,000 pounds of aluminum a year, from alunite and clays.

On the twentieth of March, I went to see a Mr. Holden who was in the O. P. M.

The CHAIRMAN. Mr. Holden appeared before this committee.

Mr. EICHELBERGER. Mr. Holden said he wasn't a bit interested in us.

The CHAIRMAN. No; he wasn't. He was not interested in anybody except the Aluminum Co. of America, so far as I could find out.

Mr. EICHELBERGER. Again we were asked out. I liked Mr. Holden.

The CHAIRMAN. He is a fine man.

Mr. EICHELBERGER. He is earnest, but he didn't want us in the picture and frankly told us so. We went back to Secretary Ickes then, and they got the Bureau of Mines to go out to Salt Lake, to our plant and investigate the process as thoroughly as they could. I went out there, aided them, went over our plant-processing costs, our plans, our models, everything. That report was finished on the 18th day of April. It got into the hands of the O. P. M. on the 25th. That report is favor-

able. I have read it. Thirty-two days later we dug it out of the O. P. M. It had been lying on a desk in somebody's office, and we got it out through the helpfulness of Mr. R. C. Allen, whom we happen to know.

At that time they appointed a technological committee to further investigate. That technological committee was composed of probably some of the highest type engineers in this country—Dr. Jeffries, now research man for the General Electric Co., and formerly with the Aluminum Co. of America for years, and who wrote the book on aluminum with Frarey; Dr. Gillette, head of the Society for Testing Materials, has written books on it, also connected with Battelle, and Clyde Williams, who was the head of Battelle, and saw our whole process go through his plant.

I went up to Cleveland on the 17th of June because they didn't even furnish Dr. Gillette and Mr. Jeffries with our material, which we had furnished them. When we got through going over with Jeffries and Gillette, going over our chemistry and our costs and the bugs, as they called them, that are in the thing, and what we had done, they reported favorably. On the 27th of June—

The CHAIRMAN. That is this year?

Mr. EICHELBERGER. This year. Mr. Bunker called me up and said, "Mr. Eichelberger, you are lucky you live in Spokane and you have the 60,000,000-pound plant." I went down and said, "Let's talk alumina."

He said, "We are not going to talk alumina. We are just talking about plants."

I said, "All right, when do we get to talk to you?"

He said, "We will get a crew here and we will talk to you about it."

I said, "You have two technical reports."

Let me state to this committee that there never has been an adverse report, even from Mr. Bunker's firm. Leliman Bros. sent their own man out there 3 years ago, when they were interested in potash.

The CHAIRMAN. How much of that alumina is available in the immediate neighborhood of Salt Lake City, Utah?

Mr. EICHELBERGER. Of alunite?

The CHAIRMAN. Yes.

Mr. EICHELBERGER. Enough to run this little, piddling Tacoma plant for the next 20 years, with what ore we own, not what is down there.

On the 15th of July there was a notice came out in the paper that the O. P. M. had given us, the Olin Corporation, which owns practically all the Kalunite, of which I am president. I am the letter "p" in the company.

Senator WALLGREN. Where do you get the word "Kalunite?"

Mr. EICHELBERGER. It is alunite with the symbol of the metal potash or potassium K, and we just add it, because good alunite is potassium alunite.

We read it in the paper, and since that day we have never had one, single, solitary, official word about anything, nor have I been able to talk to him about alumina. I did talk to a man, the man he brought down, Heath Steele, an excellent engineer, American Metals Co., not an aluminum man. He is a mining engineer.

On the 29th of July they held another technical meeting. I would like to put into this committee what occurred then because I have it.

The CHAIRMAN. This committee will accept it, if you want to put it in the record.

Mr. EICHELBERGER. I didn't know I was going to testify. I am a little tired after the plane trip last night. They held a meeting and Jeffries, Williams, and Gillette were barred, practically, because they said, "You and the Bureau of Mines" they said "You are all prejudiced about this thing. We will get another man."

So they appointed Mr. Burkey, an excellent metallurgist, a nonferrous metallurgist, copper, lead, and zinc. Mr. Burkey came down to my apartment at Wardman Park, and we talked 4 hours, and he went out to Salt Lake, looked it all over, and he said, "Why, it is wonderful, but you fellows are going to get nowhere. The Aluminum Co. has got you barred," he said to our man who was helping him.

The gloves are off in this thing, Senator Truman. I am mad.

The CHAIRMAN. We want you to take them off. This committee has been trying to get aluminum for this Government of the United States ever since last April. Aluminum is what we want, and if it takes off the gloves and the shoes and everything else, we want aluminum.

Mr. EICHELBERGER. O. K. I am a rather careful person but I am mad.

Senator WALLGREN. We would like to have you take your hair down.

Mr. EICHELBERGER. All right. I went to see a man named Chadwick at the O. P. M. I was treated with all the courtesy of a cross-eyed stepchild. I brought down Mr. Frank Walsh here, of the Tacoma Chamber of Commerce, complete plats, maps, options, titles, everything, to the only available plant site that he and I for 2 years could find around the Tacoma vicinity on tidewater. The belt line railroad pokes its nose into it. Your power plant is three good golf shots away. Your labor is right there, your paved roads, and everything. I gave these things to Mr. Chadwick in Washington, and I said, "I am wiring Frank Walsh to take you down and show you this site."

He never even had the courtesy to call Mr. Walsh up until it was all over, and said, "Find me another site."

If he wanted to hamstring me, why didn't he got to Enumclaw, where we have millions of tons of alunite and good clays, that he knew we had been working on.

Senator WALLGREN. That is just about 6 miles south of here; is it not?

Mr. EICHELBERGER. Less than that, 40 miles.

Senator WALLGREN. Just to identify it.

Mr. EICHELBERGER. Twenty-five miles from tidewater, two railroads.

Senator WALLGREN. How close to the proposed plant site of Tacoma?

Mr. EICHELBERGER. Twenty-five miles. But he didn't do that. He sticks it out in the woods. You heard Dr. Raver testify that the only place you could get this power was in Tacoma. But to build that line, get your right-of-way and go out through that country, would cost you, I suppose, \$10,000 a mile, at the least; and the land you are buying out here is stump land, they want as much for it as they do for the harbor land, and then you have to clear it, level it, and drain it.

The CHAIRMAN. Can you get your product to the tidewater in the long run?

Mr. EICKELBERGER. On a jerkwater branch of the Milwaukee Railroad.

Senator WALLGREN. Can you see any special reason for their favoring that site?

Mr. EICHELBERGER. Sure! Don't you? It is nothing more than the fact—

Senator WALLGREN (interposing). Put it in the record.

Mr. EICHELBERGER. That we may be competitors. Suppose the lightning strikes and we can make alumina—we have made it. It isn't a question of whether it is a pound of it; we have made it by the carload. We know exactly what we are talking about. They know, too, that I went down to the *Tatuta Maru* and got as fine a crowd of aluminum experts as the Aluminum Co. can stack up against them. They just built six plants in Japan. I have every plan, sir.

The CHAIRMAN. The Aluminum Co. built the plants in Japan?

Mr. EICHELBERGER. Hell, no. I have these Norwegians. I wish I could have had them on my lap on the plane. We have 42 pounds of absolutely detailed drawings of this thing.

On the 23d of June—I was kidded; I was like Dr. Raver; I was beautifully kidded. I thought this thing was going through—I went to the General Electric Co. and gave them my oral order for all the electrical equipment that would go in this thing, trying to jump the gun and get this plant started, because Tacoma will have power before anybody else, as he has already testified.

Now, these men aren't children. They have an entire operating crew. This man Chadwick brings an Aluminum Co. engineer to pick a plant site for me. I am certainly going to tell the Olin company never to take that plant site.

They said we had to have pits 14 feet deep; tidewater might get in. Of course, it would if we put in the old style prebaked carbon, but we are not. We are going to put in the latest style plant which Reynolds is putting in, exactly like it. Aluminum Co. is putting them in; Aluminum, Ltd. is putting them in. These men are Soderberg men themselves. The immigration and naturalization authorities said, "These men are so good we will waive your contract labor clauses."

I am not going to be pushed down in a stump land on a logging railroad, if this committee will help me stop that sort of thing, because this plant site—I would love it, if you go down through Tacoma, if you would go by and look it—is as level as this table top.

The CHAIRMAN. We are interested in getting aluminum for the Government of the United States in the most economical way we possibly can get it. I am not interested in this site or that site or the other site. It sounds like common sense to me to have the site on tidewater, as I said. It sounds to me like you should have been allowed to go to work a long time ago. We are going to find out why you haven't been allowed to go to work, when we get back to Washington, and somebody is going to tell this committee why, and there is going to be more trouble than you can shake a stick at unless we get aluminum in this United States. We might as well stop the defense program if we can't get aluminum. If this is the way we are going to go, delay after delay, to help a monopoly, we might just as well quit now.

Mr. EICHELBERGER. Here is a man named Edwin M. Fickes. He is director of every aluminum subsidiary in the Aluminum Co. of America, sitting alongside of Bunker's elbow. Check that.

The CHAIRMAN. In O. P. M. right now?

Mr. EICHELBERGER. Right now.

The CHAIRMAN. We found that is the way priorities in O. P. M. had been let out by people in O. P. M. to people representing Aluminum and all the rest of the big companies running O. P. M. That is what is the matter with O. P. M. right now.

Senator WALLGREN. You are stating the O. P. M. is trying to force an unfavorable site on you in order to discourage you from entering that field?

Mr. EICHELBERGER. Certainly. Dr. Raver is modest. I am not, I am like a steam calliope in this circus parade. We were shut out at Tacoma just as definitely as it could be. "Kahunite, you are out."

Dr. Raver goes to work with his engineer Schulz—I saw that fight go on down there—and he makes an inter-tie on the harbor, Municipal Power of Tacoma, Municipal Power of Seattle, Puget Sound Power and Light, and right on that inter-tie, right where I want to put the plant, where you would have to build a power line three or four golf shots away, he went and forced that down Bunker's throat. Bunker told me so. He didn't want it.

We have got here in the State of Washington, as far as I know, and I think I know something about it—we have been working here, Senator Truman, still working, have a big crew, spent a large amount—the largest clay bank of high-grade aluminum clays I know of in the United States. You can put it on a barge. Ryan, of Weyerhaeuser, told me he would bring in a lot on a barge. In Vancouver Island there is a tremendous deposit which we have investigated. You can bring that in on a barge. You don't have to get outside of this country, or a circle of 75 or 100 miles of the city of Tacoma, for aluminous material that would make all of the aluminum in this country for 100 years. You don't have to take my word. You just read your own Government, Army reports on it.

Senator MEAD. I would like to get this picture a little clearer in my mind. You say that you can manufacture aluminum, the finished product?

Mr. EICHELBERGER. I do.

Senator MEAD. Has your entire process been approved by a number of authorities? If so, who are they?

Mr. EICHELBERGER. All right. First the Bureau of Mines, entire outfit, much more optimistic than my own; the technological committee of the Academy of Science appointed by the O. P. M.; F. M. Burkey, the last man appointed; that was the next to the last herring they drew across the trail. When he came back and reported favorably, then they dragged this fellow Chadwick in to get us a bum site. That is the last. Yes, sir, we have it.

Senator MEAD. How many authorities, including Burkey and Chadwick, have approved your process?

Mr. EICHELBERGER. Chadwick didn't. He didn't know anything about it. Let me go back. This Swiss aluminum company (Allgemeine Gesellschaft Aluminum Neubausen) is one, a competitor go-

ing in with us, fighting; the Aluminum Co. of America, Lehman Bros. Corporation.

Senator MEAD. How would they enter the picture?

Mr. EICHELBERGER. They tried to buy in it when they were in the potash game. The three that I have named, and Max von der Porten, former head of the entire metal industry of Germany. No technical person I know of ever said it wouldn't work. Then the Japanese steal our patents and are running it now today.

Senator MEAD. In Japan?

Mr. EICHELBERGER. In Japan. I have that by the Norwegians I have here. They are not workmen; they are the highest type men you can see. I am sorry I couldn't have put them under my arm so you could see them. I would like the committee to see the type of men they are. They are not Chadwicks; they are real guys.

Senator MEAD. So you would assume that the fact that you can produce it is indisputable?

Mr. EICHELBERGER. We have done it month after month, not just 1 day, not a teacupful.

Senator MEAD. I mean in volume and in competition.

Mr. EICHELBERGER. Yes; we can.

Senator WALLGREN. How about your cost of production?

Mr. EICHELBERGER. I think it will be cheaper than the cost of alumina from these high-silica bauxites and competitive with the Bayer process, when you land stuff from Mobile, Ala., onto this Pacific coast.

Senator WALLGREN. Then you have an idea there are a few Aluminum Co. of America men that are getting \$1 a year from the Government. Is that the idea?

Mr. EICHELBERGER. That is a great understatement; yes, sir.

Senator WALLGREN. It is a great understatement?

Mr. EICHELBERGER. Yes, sir.

Mr. CHAIRMAN. They are not earning the \$1 with the Government, are they?

Senator MEAD. How far do you intend to go, if given the "green light" by the Government? Are you going to produce alumina? Are you going to produce aluminum, or are you going to put in a fabricating plant and go the whole distance?

Mr. EICHELBERGER. On the fabricating plant I can't tell you. The Olin company has 3 or 4 hundred million dollars worth of Government contracts. Their back is broken; but I think we will.

Senator MEAD. You think you will?

Mr. EICHELBERGER. That I can't answer. I can't say; I am merely the president of the company. I am not the board of directors.

Senator MEAD. What is the minimum program that you know they will approve?

Mr. EICHELBERGER. Now, we want to make alumina, supply this plant at Tacoma, which we will operate, and we will design, construct, build, operate, and we will be glad to have the Aluminum Co. criticize every one of our drawings.

Senator WALLGREN. You mean to say you are going to make the alumina in Utah?

Mr. EICHELBERGER. No, sir. I said we are going to make aluminum. I think we want to put it right here.

Senator WALLGREN. You are also going to make the alumina here, too?

Mr. EICHELBERGER. Yes.

Senator MEAD. So you are going to produce the alumina and the aluminum?

Mr. EICHELBERGER. Do you gentlemen know what the O. P. M. have done to us?

Senator MEAD. They have done plenty, according to you.

Mr. EICHELBERGER. I mean the things in the paper. They recommended we put up another pilot plant. We have got one. They want us to increase it so we will make 25 tons of alumina a day instead of about 5 a day. What for? What for? To delay us a year. Certainly, it costs just as much in time and a third as much in money to build a 25-ton aluminum plant as it does 100.

Senator WALLGREN. What is their excuse for asking you to do this?

Mr. EICHELBERGER. Never has been done in a commercial way in the United States.

Senator WALLGREN. You mean that particular process?

Mr. EICHELBERGER. That is right.

Senator MEAD. You have a right to assume they are attempting to harass you with every obstacle, so that eventually they will get you out of the picture.

Mr. EICHELBERGER. I think that is a correct assumption; yes, sir.

Senator WALLGREN. The Bureau of Mines, however, has approved your process.

Mr. EICHELBERGER. Oh, definitely. Read that report. It is too optimistic for me.

Mr. FULTON. I understand that is so. I was so informed.

Senator WALLGREN. I wanted to get it in the record. I think we might call in the Bureau of Mines on this very item.

Senator MEAD. You said Mr. Chadwick came out here representing O. P. M., and he was accompanied by a representative of the Aluminum Co., and they came out here, among other things, to pick out a site for you. Is that true?

Mr. EICHELBERGER. That is true. I wish you would call on Mr. Frank Walsh who is here in this room to corroborate my statement on that.

Senator WALLGREN. At Salt Lake we can have the Bureau of Mines officials there, can't we?

Mr. EICHELBERGER. Let me be there.

The CHAIRMAN. We hope you will be there. That is one of the reasons we are going to Salt Lake.

Senator MEAD. In addition to that, you said something about Mr. Burkey being associated with Lehman Bros.

Mr. EICHENBERGER. No, sir; Mr. Burkey is a metallurgist with the American Metals Co. Mr. Bunker is.

Senator MEAD. Mr. Bunker is associated with Lehman Brothers?

Mr. EICHELBERGER. He is.

Senator MEAD. And he is also associated with O. P. M.?

Mr. EICHELBERGER. He is the aluminum man; he is head of the Aluminum Division.

Senator MEAD. What connection is there between Lehman Bros. and the Aluminum Co., if any?

Mr. EICHELBERGER. I do not know.

Mr. FULTON. The president of the company testified they discussed finances with Lehman Bros., possible bond issues. Beyond that, I don't know.

Senator MEAD. What about the background of Mr. Burkey? Who is he and what were his former connections?

Mr. EICHELBERGER. Mr. Burkey is a very bright, careful, erudite metallurgist. In the last war he undertook to produce alumina from shales and clays in Georgia. The war quit before his experiments were finished. He knows our process now backwards, and he has a file of material that we gave him, that high (indicating about 2 feet).

Senator MEAD. He has no connection with the Aluminum Co., nor has the corporation he is associated with ever had any connection with the Aluminum Co.?

Mr. EICHELBERGER. I wouldn't think so. Mr. Burkey is a very estimable man.

Senator MEAD. Even though he is an estimable man, and even though we are right up against it for tanks and planes, all the necessary equipment that will be needed in this emergency, even though it may cost us billions of dollars and eventually, if the program fails, we may lose our system of government and our civilization, do you think that these men are in any way guided by their past loyalties in the discharge of their duty to this country, under these circumstances? Do you think that a man like Mr. Bunker, for instance, would in any way hark back to his association, directly or indirectly, with the Aluminum Co., when it is a case of making a decision that might mean the future well-being of our Republic?

Could you imagine a man of that type in the public service, with the Nation hanging in the balance? Have you ever given that a thought?

Mr. EICHELBERGER. Certainly.

Senator MEAD. Do you think he would be motivated by a desire to guard or protect or shield a monopoly rather than to produce the very essential necessities for our defense program?

Mr. EICHELBERGER. I would rather let this committee be the judge, after what has been said before you.

Senator MEAD. Well, I for one can hardly imagine a man who would take an oath of allegiance, or take an oath in support of the Constitution; a man so low and so depraved that he would put private profit ahead of the essential, necessary equipment that our boys ought to have.

Mr. EICHELBERGER. I wouldn't think Mr. Bunker would put private profit any place. I think he is a patriotic citizen. Don't misunderstand me on that; but I still do not understand, from what you have heard today, in the light of anything else, than that there have been influences which perhaps may not come out in the form in which you brought them, but nevertheless have served to stop or at least retard the very thing which you want in this country, which is to get into production of the essential war materials. Certainly, there is nothing has been testified before this committee, that I have ever read, that shows that there is an outstanding desire to do that.

Senator MEAD. It occurs to me that we ought to have the men mentioned, including Mr. Bunker, Mr. Burkey, and Mr. Chadwick, at a

hearing where you and all the others who are anxious to produce aluminum could also be present.

Mr. EICHELBERGER. I would love it.

Senator MEAD. I think in that way we would bridge the gap that permits these alibis to postpone the program.

The CHAIRMAN. We bridged it once before and thought we had the thing solved, but there still seems to be an unaccountable delay.

Senator MEAD. I want to tell you it is becoming very difficult for the committee to understand this succession of delays because, as the chairman said, we brought all together not so long ago, and we had all of the testimony we possibly could have presented from the conflicting elements, those that wanted to produce the aluminum and those that were stopping them, apparently, from producing aluminum. All we elicited from O. P. M. as a result of that tremendous effort was a news release that has now amounted to absolutely nothing.

Mr. EICHELBERGER. All right; I am representing some people who are in earnest. There has been no promotional thing about this. There has been nobody asked to come into the thing at all. We have asked to do it ourselves.

The CHAIRMAN. You are not even asking the Government to get behind it.

Mr. EICHELBERGER. We are not asking anybody to get behind us.

The CHAIRMAN. You want to produce aluminum because we need it.

Mr. EICHELBERGER. That is right. Is it such an effort that people can't use one of these things to write a little letter and say "Get going"? That was 6 weeks ago, 6 weeks in this kind of weather where either working in Utah or down here is vital, because it takes just so long to produce a mercury arc rectifier, for example; it takes 8 months, so they tell us, this electric company. Now, you don't shorten the time any by waiting to write that letter. That is your bottleneck in getting an aluminum plant built.

I wanted to build the alumina plant, wanted furnaces. I had bids and everything on the 15th of March, complete plans. Certainly, we haven't been helped toward our end by delay, but I do not want to impugn the patriotism of these men, because I don't yield any of my patriotism. I have been in this country a long time, but I would like to know——

Senator MEAD (interposing). It is very difficult to understand. We hear witnesses tell us of the actions of these men representing O. P. M. and, incidentally, referring to their former connections with big business, with business that might inure competition, if their decision is made speedily, and in a way that would spread the works. And then we are told by other witnesses of treatment that is accorded to them when they go to Washington to confer with these men, treatment that isn't representative of the finest traditions of the public service.

Then we are told about the refusal of some officials to answer the mail, important mail, mail that deals with the vital necessities of national defense. Then we hear about them changing the plans and specifications, hamstringing men that want to get in the business of producing these vital necessities.

I am beginning to wonder about the patriotism of these men, and yet I could never bring myself to believe that they would let anything stand in the way of the speedy, expeditious production of all the ma-

terials that our boys need to properly defend themselves and the country.

I think this is the most serious situation that has come before our committee, and I think that we ought to bring all the parties to the controversy at some common point so that we could get right to the bottom of it, calling and recalling witnesses, so that there could be no evasion, no postponement. We could determine the contents of a certain letter that was mentioned here today. We could bring the man who received that letter. We could demand an explanation of his refusal to answer that letter. That is just an illustration of how we could bring this thing to a conclusion, so that we really would be able to fix the responsibility.

Mr. EICHELBERGER. Senator, I agree with you perfectly, but if we are going to make aluminum, if this press release means anything, there is no time to call on witnesses. It is time to be signing contracts.

The CHAIRMAN. Not to be signing contracts. Turning dirt and pouring concrete is what you ought to be doing.

Mr. EICHELBERGER. That is what we ought to be doing. That is what we have plans for. Don't misunderstand. Any statement I have made here today, I have made in as great an earnestness as I have ever made any. I don't want to sit and read another Oliver Wiswell outside of somebody's door. I read three books sitting outside other people's doors. I want to get to work, or I want to quit.

Senator MEAD. Of course, this is a democracy. They are not signing the contracts. If this were a dictatorship, somebody would suffer for the delay. But being a democracy, it is necessary for us to give every man an opportunity to be heard, and there are answers to all questions. So it seems to me that the best thing for this committee to do is to provide a public forum, put the searchlight of publicity on this question, to find the responsible individuals and smoke them out.

Mr. EICHELBERGER. I would like to have you do it.

The CHAIRMAN. That is what we are going to try to do.

Mr. Frank Walsh, please. Do you solemnly swear to tell the truth, the whole truth and nothing but the truth, so help you God?

Mr. WALSH. I do.

TESTIMONY OF FRANK J. WALSH, INDUSTRIAL ENGINEER, TACOMA CHAMBER OF COMMERCE, TACOMA, WASH.

The CHAIRMAN. Be seated, Mr. Walsh. Give your name and connections to the reporter.

Mr. WALSH. Frank J. Walsh, industrial engineer for the Tacoma Chamber of Commerce.

The CHAIRMAN. You heard the statement made by Mr. Eichelberger about the location of the aluminum plant site in Tacoma. I would like to have your statement on that subject.

Mr. WALSH. Before Mr. Eichelberger went to Washington, as a matter of fact, more than a year ago, we studied the possibilities of sites around Tacoma, and selected a district which is known locally as the Hylebos waterway.

Two or three weeks ago Mr. Eichelberger telephoned me to send him maps showing sites which would provide 80 to 120 acres. These maps were sent to him with an option and a certificate of title, so that

there wouldn't be any question as to the transfer. About 2 weeks ago I understood from Washington that Mr. Chadwick, representing the O. P. M., would be in Tacoma looking over these sites, for approval or disapproval.

A week ago last Saturday I was talking to Dr. Raver and he said Mr. Chadwick was in Portland, he would probably be up toward Tacoma shortly. Dr. Raver said he didn't know whether Mr. Chadwick would see me or not; he understood he was not going to contact any local people.

Sunday noon I had a phone call which stated—that is, from a local man in Tacoma, one of the railroad men—that Mr. Chadwick and party had left Portland on the plane and was coming to Seattle and would drive back to Tacoma and look at the sites, and this man wanted to meet him. I had no further or other information on the subject. I figured that I should see those people, although they hadn't notified me that they were coming. So I went down to the location of these sites as soon as I could. The plane got in, I understood, at 10:20, and I got down there maybe a quarter after 12, figured that when they come to Tacoma they would stop and get out of the car and look over the sites, and that I could go up and make myself known.

From that time, a quarter after 12 until a quarter after 2, no one stopped but I did notice a car cruising north along the road slowly, and half an hour or so later it came back, going in the other direction. I thought at the time that it was the men who were looking at the sites because they were driving slow. I went home.

About 4 o'clock Mr. Chadwick called up and said that he had looked over the sites, that they were unsatisfactory, wanted to know if I had anything else to offer.

I met him down in the office and we went over the maps that I had there for alternate sites, and wanted to know what his objections were. He told me that they had one furnace building that required to be some 14 feet below grade, in which they baked the electrodes, very high heat, and that, due to the water level in the ground, there would be water on the outside at all times, and that the extensive heat on the inside and cold water on the outside would be almost sure to crack these concrete-lined pits.

I suggested that they move over to the foot of the hill, in a notched-out place there, 10 or 12 feet higher, but Mr. Jolly said that that would not do. Mr. Jolly was the chief engineer of the Aluminum Co. of America, I believe, who was accompanying Mr. Chadwick.

Senator MEAD. Did he give any reason why?

Mr. WALSH. Why that wouldn't do on the side of the hill?

Senator MEAD. Yes.

Mr. WALSH. Well, he said it was a big building.

Senator WALLGREN. Let me get this: The chief engineer of the Aluminum Co. was recommending a site for another competitor. Is that the idea?

Mr. WALSH. Yes. The chief engineer said that the Aluminum Co. of America was going to build this site, that they did not want to build it in a place where there was any possibility for anything to go wrong with the construction. They wanted a location——

Senator WALLGREN (interposing). Were they going to build it and the Olin Co. was going to operate it?

Mr. WALSH. That was the understanding that I had.

Senator MEAD. So, in reality, Chadwick accompanied Jolly; Jolly had the veto power.

Mr. WALSH. I felt that way.

The CHAIRMAN. Are there any other questions?

That is all, Mr. Walsh.

(A copy of the proceedings of a special meeting of the executive committee, Mining Bureau, Associated Chambers of Commerce of Washington was marked "Exhibit No. 114" and is included in the appendix on p. 2272.)

The CHAIRMAN. The committee will recess until 10 o'clock tomorrow, and we request that Dr. Raver and Mr. Miller be here to discuss the magnesium situation with us.

A subcommittee of this committee will go to Alaska tomorrow to investigate the national-defense projects up there. That subcommittee will be Senator Mead, of New York, and Senator Brewster, of Maine, and Mr. Fulton, the counsel for the committee.

Senator Wallgren and I and Mr. Clark will sit here and continue these hearings until we are through.

The committee is recessed.

(Whereupon, at 4:10 p. m., the committee recessed until 10 a. m., Tuesday, August 26, 1941.)

INVESTIGATION OF NATIONAL DEFENSE PROGRAM

TUESDAY, AUGUST 26, 1941

UNITED STATES SENATE,
SPECIAL COMMITTEE INVESTIGATING
THE NATIONAL DEFENSE PROGRAM,
Seattle, Wash.

The committee met at 10:05 a. m., pursuant to adjournment on Monday, August 25, 1941, in courtroom No. 4, United States Court-house, Senator Harry S. Truman presiding.

Present: Senators Harry S. Truman (chairman), and Mon. C. Wallgren.

Present also: Charles P. Clark, associate chief counsel.

The CHAIRMAN. Dr. Raver, will you please take the chair again?

TESTIMONY OF PAUL J. RAVER, ADMINISTRATOR, BONNEVILLE POWER ADMINISTRATION, PORTLAND, OREG.—Resumed

The CHAIRMAN. Dr. Raver, I understand that there was a statement made yesterday about a reply to a certain letter,¹ that you wanted to correct in the record.

Dr. RAVER. There is. I have received information from the office that the letter that I referred to, from Mr. Dittmer to Mr. Bunker, was acknowledged on July 8. What I should have said was that we have not as yet received the information we asked for.

The CHAIRMAN. You only received an acknowledgment and not the information that you asked for, which practically amounts to the same thing. But we want the record to show exactly what the facts are.

Dr. RAVER. That is correct.

The CHAIRMAN. Do you have some questions you wanted to ask the Doctor?

Senator WALLGREN. We might step into this magnesium question now.

The CHAIRMAN. Before we do that, let me ask the Doctor another question. I wanted to ask you, Doctor, just what Colonel Weaver's connection was with the proposed change of site down in Oregon.

Dr. RAVER. As I understand it, Colonel Weaver was sent out here by the United States Army Engineers, representing Mr. Patterson, the Assistant Secretary of War, to pass on the location. Colonel Weaver, of course, had been the engineer in charge of the construction of Bonneville Dam and was quite familiar with the terrain and

¹ See supra, p. 2120.

weather conditions, and so on, around Cascade Locks. Cascade Locks, you understand, is right within a few miles of Bonneville Dam.

The CHAIRMAN. I see.

Dr. RAVER. That is one of the reasons that we recommended the particular site.

The CHAIRMAN. What is the distance from the dam, of the site which he recommended?

Dr. RAVER. I understand that he has recommended Troutdale. Troutdale is about 15 miles up the river from Portland. That would be probably 30-some miles down the river from the dam.

The CHAIRMAN. Well, is it the policy of the authority in charge of Bonneville not to distribute power south of the Columbia River?

Dr. RAVER. No. You mean in the State of Oregon?

The CHAIRMAN. Yes. It has been indicated to me that there was some tendency on the part of the authority not to want to distribute power in Oregon. Is that true?

Dr. RAVER. It very definitely is not true. We are quite anxious to develop the State of Oregon, and I would like very much to get some industrial development going in the State of Oregon, using our power.

The CHAIRMAN. I see. Well, the only objection, then, to the location at Troutdale, so far as your organization is concerned, was the difference in the necessary expenditure to put it into operation.

Dr. RAVER. And the time it will take. That is correct. We can't get Troutdale into production probably before June or July of next year, and, as I said, it will cost us about \$2,000,000 more to serve this load at Troutdale than it will at Cascade Locks. Furthermore, it will require use of a very important transmission line which was constructed from Bonneville Dam to Portland for an entirely different purpose.

The CHAIRMAN. I see.

Dr. RAVER. That line, which is known as our Oregon City line, is a double-circuit, steel tower line that was built to supply power into the Portland area and to back up the Aluminum Co. of America load at Vancouver; in other words, to give a double feed into the Portland area. We only have one feed in there now, and that comes down the Washington side of the river.

Now, to put this load of 97,500 kilowatts at Troutdale would mean that we would have to use this Oregon City line and, therefore, destroy its usefulness for the purpose for which it was installed. We can do that but it will take the Oregon City line out of use until 1943. It would be 1943 before we could restore the Oregon City line to its usefulness.

The CHAIRMAN. I merely wanted to clear this situation up for the record. I also wanted to know what Colonel Weaver's connection was with the location of this site. I didn't have it clearly in my mind from yesterday's record.

Dr. RAVER. Well, I have respect for Colonel Weaver and know him quite well, and he undoubtedly has sound reasons, from his point of view, for recommending the change, but I felt it necessary that we point out the difficulties of going to the place that he recommends.

The CHAIRMAN. Well, when we get back to Washington we will give him a chance to put those sound reasons into the record.

You proceed, Senator Wallgren.

POSSIBILITIES OF DEVELOPING MAGNESIUM IN NORTHWEST

Senator WALLGREN. What studies have you made of magnesium down at Bonneville?

Dr. RAVER. We have been studying the magnesium problem continuously for the last year or year and one-half. Mr. Miller, engineer on our staff, who is serving you here now as an adviser, can, I think, give the committee the kind of a story that you ought to have about our studies of magnesium. We have put out some statements and reports about the possibilities of developing magnesium out here. I think you should have in the record, perhaps, a copy of our report on defense industries possible of development in the Northwest, if you don't already have that.

The CHAIRMAN. We have not. We would be appreciative if you would furnish us with that.

Senator WALLGREN. When did you finish that report?

Dr. RAVER. That came out, as I recall, last fall.

Mr. MILLER. It came out last June.

Dr. RAVER. You mean a year ago?

Mr. MILLER. A year ago; yes, 1940.

Dr. RAVER. That was when we first became interested in the national-defense problem, and Mr. Miller and Mr. Bloch in our market-development section immediately analyzed the strategic material situation out here, so far as the information could be gathered, and put out this report. It includes quite a report on magnesium.

Senator WALLGREN. We will call on Mr. Miller, then. For the present that will be all.

Dr. RAVER. Mr. Chairman, we have been working for some time with a group of people in Bellingham, Wash., who are interested in establishing a small, high-grade iron-and-steel industry there, using Bonneville power.

Our investigation has indicated that this is a feasible development and one that has national-defense significance because of the present shortage in iron and steel manufacturing capacity.

We have just received a letter from Mr. DeLong, of the Puget Sound Pulp & Timber Co., the organization interested in developing this project, and he has indicated that, because of his inability to secure priorities for the construction of his plant, it is necessary for them to give up the construction of their project. I would like to place his letter in the record for your information.

(The letter referred to was marked "Exhibit No. 115" and is included in the appendix on p. 2280.)

The CHAIRMAN. Thank you, Doctor.

Senator WALLGREN. I would like to have Mr. Eichelberger take the chair, please.

TESTIMONY OF FRANK EICHELBERGER, PRESIDENT, KALUNITE, INC., SALT LAKE CITY, UTAH—Resumed

Senator WALLGREN. Mr. Eichelberger, yesterday in your statement to the committee, you called attention to your alunite process and, as I recall it, you mentioned the fact that Japan at the present time was

using that particular process and had established some six or seven plants. Is that true?

Mr. EICHELBERGER. Yes, sir. They use a process in Korea and Manchukuo.

Senator WALLGREN. Do they use the same process that you use?

Mr. EICHELBERGER. Well, all I can say is this, Senator, that we patented this process in Japan, as we have all over the world, and they were not successful in producing the aluminum from alunite until after we had patented it there.

Now, these gentlemen that I have here, Mr. Sjoeli, his son, and the others, told me that, as far as they could determine, after they had seen our process patents and I had gone over them, there was no difference, except that they didn't use the same type of autoclave. In other words, they got around the patent by using a little different apparatus, but as far as he could tell there were six plants producing alumina which came from alunite.

Senator WALLGREN. This alunite is the same clay that we have in this country?

Mr. EICHELBERGER. Yes, sir. Alunite is a mineral that has a very definite composition.

Senator WALLGREN. How long have those plants been in operation? Do you know?

Mr. EICHELBERGER. Since 1938. Mr. Sjoeli has been operating them. The production of aluminum in Japan today is greater than what we produced in the United States in 1939.

The CHAIRMAN. They are using this process?

Mr. EICHELBERGER. Yes. They also have the Bayer process in the main island of Japan. Those main plants are using alumina made from bauxite. In Korea and Manchukuo those plants are using alunite as the source of aluminum.

That is a remarkable statement I just made about Japan's producing more aluminum today than the United States did in '39—180,000 metric tons.

The CHAIRMAN. That is a remarkable statement. How long has it taken them to get into that production, from the time they started?

Mr. EICHELBERGER. One and one-half years, and they will be producing over 200,000 metric tons by the fall of this year, within the next three months.

The CHAIRMAN. The Swiss cartel evidently didn't work in Japan this time.

Mr. EICHELBERGER. Evidently not.

Senator WALLGREN. It is my understanding the O. P. M. has tried to discourage the use of your particular patent.

Mr. EICHELBERGER. Very definitely.

Senator WALLGREN. And yet we find Japan, over a period of time, using practically that same process and turning out more aluminum than we are turning out.

Mr. EICHELBERGER. Than we turned out in 1939.

Senator WALLGREN. Than we turned out in 1939.

Mr. EICHELBERGER. That is correct, sir. You gentlemen have access to a great deal of secret information on this, which I do not feel I should give here.

The CHAIRMAN. You are correct on that. You should not give that information here.

Senator WALLGREN. When did they first start using this process in Japan?

Mr. EICHELBERGER. They tried it in 1934 and didn't succeed, turned their plants over to using the Bayer process, gradually working on this. Then, as I understand it, in '38 they went back to the alunite and have since been using it.

Senator WALLGREN. To your knowledge, is there any difference in those days? Are they of higher quality than our clays?

Mr. EICHELBERGER. Not a bit; the same thing. The deposits are very large but don't forget we have very large deposits in this country, too, irrespective of what people try to say about them. We know how large they are.

The CHAIRMAN. Whereabouts are those deposits principally located, Mr. Eichelberger?

Mr. EICHELBERGER. The ones which we have diamond drilled and generally developed are here at Enumclaw, Wash. That is about 25 miles due east of Tacoma. The others are in Utah, and two in Nevada.

The CHAIRMAN. We will look into those Utah-Nevada locations when we go to Salt Lake City next Tuesday.

Mr. EICHELBERGER. We have never brought out the amount of alunite which we think we have developed or at least indicated in Enumclaw, but just Friday I was at the Bureau of Mines with Mr. Thenen, and Mr. Callahan also made the same report, that they thought that the deposits at Enumclaw would be as great as those in Utah. The terrain is very difficult; most of it is covered with heavy timber and, if not with heavy timber, then with stump lands, stumps, and heavy overburden.

Senator WALLGREN. How long has Japan had these six plants in operation with this process?

Mr. EICHELBERGER. Two of them went into operation last fall and the other four had been operating since 1938. I think, when you get to Washington, the committee might be interested in holding a secret hearing about those with Mr. Sjoeli, and I will make him available to you.

The CHAIRMAN. Thank you very much.

Senator WALLGREN. Is your Tacoma plant expected to use the Soderberg electrode or the prebaked electrode?

Mr. EICHELBERGER. The Soderberg. We have complete plans, down to the last nut in the plant.

Senator WALLGREN. Would it be necessary to have the 14-foot pits suggested by the Alcoa engineer at your Tacoma plant?

Mr. EICHELBERGER. No, sir. It not only wouldn't be necessary but we wouldn't have them. The baking of an anode is a highly specialized thing. There are very few plants in the United States—the Aluminum Co. have some, the Great Lakes Carbon, the Union Carbide, and the Dow Chemical. The Union, Great Lakes, and Alcoa are the ones that bake these, and I don't know where I would go to get a carbon man, but on the Soderberg process you have a large supply, not only petroleum coke from California but you have a great deal of it in Portland, Oreg., and there will be more of it. It is a continuous anode, in which

the heat of the cell itself bakes the carbon. That is the newest and the best and the cheapest.

Senator WALLGREN. Is that the same process Japan is using?

Mr. EICHELBERGER. Yes, sir.

Senator WALLGREN. Exactly the same?

Mr. EICHELBERGER. Exactly the same as Mr. Reynolds is using at the Reynolds Metal plant being erected at Longview, and they are right on tidewater, or salt water, practically.

Senator WALLGREN. You mean to tell this committee that Japan has been operating aluminum plants—I am just going to review this thing—since 1932, did you say?

Mr. EICHELBERGER. Thirty-eight.

Senator WALLGREN. Using this same alunite process that you wish to use in Tacoma?

Mr. EICHELBERGER. As far as I know, that is an absolutely correct statement.

Senator WALLGREN. They have operated six plants, at least six, since 1938?

Mr. EICHELBERGER. That is right, and built by the same men whom I brought over here.

Senator WALLGREN. And in 1939 they turned out more aluminum than we turned out in that year?

Mr. EICHELBERGER. That is right.

Senator WALLGREN. That is all I have at the present time.

Mr. EICHELBERGER. That will be disputed, sir, but I can bring you proof, nevertheless.

The CHAIRMAN. All right; you get your proof.

Senator WALLGREN. Did you have anything else to offer this committee, supplementing what you told us yesterday?

Mr. EICHELBERGER. One more thing. I don't know whether I made it plain enough that the reason I wanted this plant site where it was picked out was because, after a year's study, helped greatly by the Tacoma Chamber of Commerce and by the businessmen, this site had labor within 3 miles of the whole city, was on deep water, the power line was right there, the railroad was right there, and that belt-line railroad would serve all the railroads. While if the plant tentatively chosen by Mr. Chadwick is used, the cost of the power line would be 10 times the cost of that land that we want to purchase on the harbor site. Irrespective of the cost of the land, of clearing the stumps, grading, and all like that, why should we put in one hundred fifty or one hundred seventy thousands for a power line when you haven't even got the materials to build the plant?

Senator WALLGREN. Just what is the exact location? We have talked constantly about this location chosen by the Alcoa representatives. Let's call them that. Just what is that location?

Mr. EICHELBERGER. It is a location, as you go out on Pacific Highway, way out back of McChord Field, on whatever branch that is of the Milwaukee Line, that logging road branch, I don't recall. If I had a map, you could tell it.

Senator WALLGREN. I think I know about where you mean. Is there any rail transportation out there at all?

Mr. EICHELBERGER. One. Milwaukee has a logging road that runs out there.

Senator WALLGREN. A logging road?

Mr. EICHELBERGER. That is all.

Senator WALLGREN. How about water facilities?

Mr. EICHELBERGER. None. Highways are not too good to them.

Senator WALLGREN. Has there been any excuse offered for the choice of such a location?

Mr. EICHELBERGER. I have never seen Mr. Chadwick but that once, and then I gave him the entire certificate of title, option from the Tacoma Harbor Board, I think it is, the price, everything. I have never received an acknowledgment, nor have I seen or heard a word from him. It is just another thing to slow this whole thing up. We should have been going 2 months ago.

The CHAIRMAN. I agree with you. That is what we are trying to find out, why in the world don't they let you go?

Mr. EICHELBERGER. Oh, Senator Truman, I wish I knew. We are ready. We have the plans and everything.

The CHAIRMAN. We are going to find out. If you can't, we will find out.

Senator WALLGREN. It would take you far longer to put this new site in readiness than it would the site you planned?

Mr. EICHELBERGER. Oh, surely. Dr. Raver would have that on his shoulders to produce a power line, with all the materials necessary, while on this other, as you heard him testify yesterday, he said he could be ready by January or February. That is why I gave an oral, verbal order to one of the electric companies to get these rectifiers, as long ago as June, because I couldn't imagine this thing would be held up 2 or 3 months. If they had respected that order we would be going by the time the power line is ready, but not out on this new site.

Senator WALLGREN. That might mean almost a year.

Mr. EICHELBERGER. It would mean quite a few months' difference, surely.

Senator WALLGREN. Thank you, Mr. Eichelberger.

The CHAIRMAN. Mr. Eichelberger, I hope that you will be in Salt Lake City when we arrive there Tuesday.

Mr. EICHELBERGER. I'll be there; no fooling.

The CHAIRMAN. Mr. Miller, will you take the witness stand, please?

TESTIMONY OF RAYMOND M. MILLER, SENIOR INDUSTRIAL ENGINEER, BONNEVILLE POWER ADMINISTRATION, DEPARTMENT OF THE INTERIOR, PORTLAND, OREG.—Resumed

Senator WALLGREN. Mr. Miller, we wish to discuss this morning, for the record, magnesium, the possibility of development of our magnesite ores and the use of our cheap electricity in the manufacture of magnesium in this State. Would you go on and tell the committee something of your studies of that particular ore and mineral and metal?

Mr. MILLER. Some 6 or 7 years ago, Dean Drucker, of the State College at Washington, seeing that we would have a great deal of cheap hydroelectric power in the Northwest, started to work on studying various industries that could advantageously use that cheap power and develop industries in the Northwest.

I discussed this matter with Dean Drucker at that time. I am a great admirer of the gentleman, and I am quite willing to give the Dean a great deal of credit for his foresight. He conceived a light metal industry, one of which would be the magnesium industry, based upon the magnesite deposits of Stevens County.

The CHAIRMAN. That is the northeast county of the State of Washington?

Mr. MILLER. Yes. That is just north of Spokane. Those deposits have been known for a good many years. They are being worked today for the production of refractory magnesite. They are of very high grade, although they contain tremendous tonnages of low-grade magnesite as well. However, in order to utilize those deposits to their utmost, Dean Drucker's organization started to work on the development of a flotation method whereby silica and dolomite could be separated from the magnesite that would be desired for the magnesium process.

He has perfected, in his laboratory, this flotation process and proposes that much of this Stevens County low-grade magnesite for magnesium be recovered by flotation from low grade rather than from the high grade that is desired for refractories.

At the present time, the Northwest Magnesite Co., operating in the Stevens County field, has built a flotation plant of, I believe it is, 175 tons capacity.

The CHAIRMAN. That is per day?

Mr. MILLER. Per day—to treat a large stock pile, that they have at their plant, of low-grade magnesite.

Senator WALLGREN. How do they use their product?

Mr. MILLER. Do you refer to the rejects, Senator?

Senator WALLGREN. Is this the company that furnishes linings for furnaces?

Mr. MILLER. Yes. The Northwest Magnesite is a refractory manufacturing company. They are a subsidiary of Harbison-Walker and General Refractories. They require for refractories a magnesite of over 90 percent magnesium carbonate, whereas much of the magnesite of Stevens County will run as low as 50 and 60 percent magnesium carbonate.

When they mine this magnesite, they select their high grade out of it and reject the low grade. Today they have a reject pile of, as I remember in discussions with the superintendent of that plant, approximately 1,000,000 tons of that low grade reject.

Senator WALLGREN. Do you know whether there is any intention on their part of using this reject pile that you speak of?

Mr. MILLER. In discussing the matter with them, they have indicated to me that they hope at some time to go into the magnesium business but up to the present time they have not gone ahead with such a project. However, they have built that flotation plant in order to start recovering the magnesite from the reject, and they will use that for their refractory manufacturing.

Senator WALLGREN. It is my understanding that at the college over there they are using the ore from this reject pile in their experiments. Is that right?

Mr. MILLER. That is right; yes.

Senator WALLGREN. And they are turning out 99.97 percent pure magnesium from this pilot plant.

Mr. MILLER. Yes. I believe some of the analyses I have seen, Senator, have been over 99 percent magnesium.

The CHAIRMAN. What are the uses of magnesium after it is in sheet form?

Mr. MILLER. Magnesium is a very important light metal for alloying with aluminum, in the production of structural aluminum parts. Aluminum magnesium alloys have practically made possible this great aircraft industry that we have today.

The CHAIRMAN. It is absolutely vital and essential—

Mr. MILLER (interposing). It is absolutely vital and necessary.

The CHAIRMAN. For our national defense program.

Mr. MILLER. Yes.

The CHAIRMAN. Can magnesium be used in a way that would be a rival to aluminum and help us meet this aluminum shortage with magnesium itself?

Mr. MILLER. Yes, it can, Senator. Experiments have been made to determine the possibility of utilizing magnesium where aluminum has been used before. It has been successful because magnesium is only two-thirds the weight of aluminum.

The CHAIRMAN. That is, a pound of magnesium would be about 1.60 greater in bulk and volume than a pound of aluminum.

Mr. MILLER. That is right.

The CHAIRMAN. So that we will say 650 pounds of magnesium would go just as far as 1,000 pounds of aluminum in the fabrication of a plane.

Mr. MILLER. That is right, let us say, where the factor of strength does not operate. Magnesium is being used as the magnesium alloy, with a small amount of aluminum, in the manufacture of aircraft parts such as engine blocks, and various of the parts where no great stress is encountered.

It is my belief that alloys can be developed, possibly are already available, so that magnesium can be substituted as the basic metal, even where structural strength is required, for the present aluminum-magnesium alloys.

Therefore, if we develop our magnesium industry, although we do not eliminate the need for a large production of aluminum, we so supplement that production as to reduce, to some extent, the strain upon that industry.

The Office of Production Management, in the last 4 months, has finally decided that we will need for our aircraft industry in the United States approximately 200,000 tons of magnesium metal.

The CHAIRMAN. For a year's consumption?

Mr. MILLER. Annually; yes, sir. A year ago, when the report to which Dr. Raver referred, was compiled by the Bonneville market development section, we had only about 6,000,000 pounds capacity of magnesium in the Midland plant of the Dow Chemical Co. This company, at that time, increased the capacity of that plant another 6,000,000 pounds, giving them a total capacity of 12,000,000 pounds at Midland, and then, as I understand, were induced by the Government to build another 6,000,000-pound plant at Freeport, Tex.

Senator WALLGREN. All of this that the Dow Chemical Co. has made has been made out of salt water brine.

Mr. MILLER. Yes. The Midland plant of the Dow Chemical Co. utilizes brine. The Freeport, Tex., plant, that was built last year, utilizes sea water.

The CHAIRMAN. Well, that whole amount that you have mentioned only amounts to 9,000 tons a year.

Mr. MILLER. Subsequently, Senator, the Freeport plant has been increased to 12,000,000 pounds, so that they have about 24,000,000. Now I understand that they propose to increase that still further, but I am not——

The CHAIRMAN. According to your figures just now given, we will still be short 185,000 tons a year of the necessary magnesium to meet the situation.

Mr. MILLER. Yes; if we were to depend upon that operation.

Senator WALLGREN. Our principal use of magnesium, though, at the present time, has been in the manufacture of incendiary bombs and flares, has it not? That has been the principal military use?

Mr. MILLER. Yes.

Senator WALLGREN. This committee has seen German bombs made from magnesium. Do you know anything about the rapid strides that Germany has made in the use of magnesium?

Mr. MILLER. That information is not generally available to us. I can only say, Senator, what I have been told by others who I believe to be competent. The German Government has developed the production of magnesium and the utilization of magnesium in their aircraft industry to a considerable extent. They have made bomb casings from magnesium. They have made engine blocks. They have made airplane parts from magnesium metal to lighten the plane and increase its speed, and I presume there are a great many applications they have made with which I am not familiar.

The CHAIRMAN. You understand that one of the reasons why the magnesium industry is not any further along than it is in this country is on account of the agreement made with the Aluminum Co. of America and the Metals Co. of Germany,¹ through the Swiss cartel, that we were not to make over 4,000 tons of magnesium in this country at any time. That was brought out in the antitrust prosecution of the Aluminum Co. of America. So it all hitches right together. That is one of the reasons for our shortages of light metals when we need them worse than we ever needed them in the history of the country.

Senator WALLGREN. What arguments have you heard to discourage the use of magnesium, as against the metal, if any?

Mr. MILLER. I can't say, Senator, that I have heard any definite arguments to discourage the use of magnesium in this country, but there have been certain difficulties that have retarded its development. One of the first difficulties has been its high cost. Magnesium has cost approximately one and one-half to two times the cost of aluminum. Naturally its use will not be developed until the cost can be brought to a point where it can be economically used in competition with other metals.

¹ I. G. Farben.

Another difficulty in the use of magnesium has been the low strength of the metal alone. Under continued stress there is some tendency for magnesium to crack. By alloying it with certain metals, with aluminum, perhaps with other metals like copper and manganese that are tough malleable metals, you can get alloys that, to some extent, overcome this tendency of the metal to crack.

It is quite possible that our metallurgists will develop further alloys that will enable us to extend the use of magnesium and decrease the corresponding use of aluminum for light metal alloys.

Senator WALLGREN. I might say to you this committee has seen experiments where plane wings have been constructed out of magnesium, without the use of a rivet. We have seen magnesium welded. I have some samples here with me. We have seen magnesium treated against corrosion. We have samples of that. This is my exhibit. These are supposed to be more or less secretive—that is the process—but there is a welding of magnesium, and treatment against corrosion, that is to arrest corrosion. This committee has seen plane wings welded without the use of rivets, welded in that manner.

I think we have seen enough for this committee to feel at least that magnesium is truly a coming metal in the airplane industry.

Mr. MILLER (examining welded sample). That is a very remarkable development, Senator.

Senator WALLGREN. These are pieces that have all been welded and treated for corrosion. This ingot here has been made from that pile that you spoke of over in Stevens County.

Mr. MILLER. The reject pile at Stevens County.

Senator WALLGREN. Made at the university. This is a sample of the ore from which it has been made.

Now, do you feel satisfied that we have in the State of Washington the necessary ores for producing magnesium in this State?

Mr. MILLER. I do, Senator, and I will make that statement unqualifiedly.

The CHAIRMAN. What companies are interested in the development of magnesium deposits in this area?

Mr. MILLER. At the present time there are three groups that have expressed to us, that is the Bonneville Power Administration, an interest in the production of magnesium in Washington, utilizing the Stevens County magnesite. One company has announced its intention to build a magnesium plant at Spokane. This is the Henry J. Kaiser Co., one of whose interests has built a magnesium plant at Permanente, Calif.

The other is a small group, locally financed, who I feel quite certain would go ahead with the plant if the Doerner process were in such shape that it could be utilized.

There is a third group that has been discussing this matter with us and is now investigating both the possibility of financing such an operation, the possibility of constructing a small unit to start utilizing the Doerner process, and the possibility of getting control of magnesite ground to supply the plant.

I do not name these latter two companies because I feel that that should come from them, and they may not at this time like to have their identity known, but their interest is definite.

The Henry Kaiser Co. is utilizing at the Permanente plant, and proposes to utilize at the Spokane plant, a process known as the Hansgiring or Austrian process.

The CHAIRMAN. That is the one the Germans use?

Mr. MILLER. That is right. It was developed in Austria and is being used there, as I understand, at the present time.

Senator WALLGREN. What type of process is that, an electrolytic process?

Mr. MILLER. It is an electrothermic process.

Senator WALLGREN. I thought that Doerner's was electrothermic.

Mr. MILLER. They are both electrothermic. The Austrian process is somewhat similar to the process developed by Doerner. As a matter of fact, the differences are only in details.

Senator WALLGREN. Would you say the processes are simple?

Mr. MILLER. No; I would not say they are simple, Senator. Any process that requires its operation in a reducing atmosphere is not simple. Nevertheless, it is not too complicated to be practical.

Senator WALLGREN. It isn't a question of accumulating different ores or any thing of that sort. You practically have, as I understand it, this magnesite ore here, which is found in eastern Washington, and this is concentrated, and then calcined—is that what they call it?

Mr. MILLER. Yes. The concentrates are calcined to magnesia.

Senator WALLGREN. Into a powder similar to alumina, this powder here [indicating sample]. As I understand it, they run 1,000 pounds of that with about 300 pounds of carbon, all of which can be obtained in this State, and that is all that you need except your process.

Mr. MILLER. That is all, except the reducing atmosphere, Senator.

Senator WALLGREN. But all of this can be obtained in the State. That is what I am trying to get at.

Mr. MILLER. Yes.

Senator WALLGREN. No foreign substance has to be used along with these metals that we have right here.

Mr. MILLER. Yes; that is right.

Senator WALLGREN. And those metals are available in the State. It is only a question now of perfecting this process so that we could go ahead and manufacture magnesium. Mr. Doerner claims that, with his process, magnesium could be manufactured for 10 cents a pound.

Mr. MILLER. I think he qualifies himself, but he believes that he can get somewhere near that cost, and that is very low for magnesium.

Senator WALLGREN. I think that will be all, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Miller.

Senator WALLGREN. I might ask this one further question of Mr. Miller. Do you feel that the cheap electricity we have in this State would lend itself to an economical production of this metal?

Mr. MILLER. Yes, I do, Senator. I believe that is the only answer to the production of this light metal for our defense program, this cheap Columbia River power.

The CHAIRMAN. We had a gentleman here yesterday who wanted to be heard on antimony. Do you want to make a statement to this committee on your antimony process?

Mr. NELSON. Very briefly.

The CHAIRMAN. Do you solemnly swear to tell the truth, the whole truth and nothing but the truth, so help you God?

Mr. NELSON. I do.

TESTIMONY OF ISRAEL NELSON, SEATTLE, WASH.

POSSIBILITIES OF DEVELOPING ANTIMONY IN NORTHWEST

The CHAIRMAN. Take that seat and give the reporter your name and connections, please.

Mr. NELSON. Israel Nelson, 802 Lowman Building, Seattle, representing Clarence H. Jones, 206 Lowman Building, and his associates, on the subject of antimony and the undertaking which Mr. Jones and his associates have under way to accomplish.

The CHAIRMAN. What are the uses of antimony, in the first place?

Mr. NELSON. It is the great bearing metal, the alloy metal for bearings. Accordingly, the railroads could not run, the wheels would not turn over, nor the airplanes fly, or turbine engines be operated.

The CHAIRMAN. Where do we get the principal supply of antimony now?

Mr. NELSON. There is no principal supply now. In this sense, it has to be a new industry developed in the United States for the reason that antimony at present is only a byproduct production.

The CHAIRMAN. Byproduct?

Mr. NELSON. Coming from the heavy smelters and, incidentally, production—

The CHAIRMAN (interposing). It comes from the smelting of other metals?

Mr. NELSON. Yes.

The CHAIRMAN. What are those metals?

Mr. NELSON. Well, I am a layman and wouldn't be so well acquainted, but that production only represents a few percent of what the Nation requires.

Senator WALLGREN. I think Mr. Miller may assist you in that.

Mr. MILLER. Let me explain, Senator, antimony at the present time is recovered in the United States very largely through the smelting of lead. The ore occurs in association with lead, and, therefore, our supply is antimonial lead.

For pure antimony, our supply in former years has been imported very largely from China and from Mexico. The Chinese imports, however, have been shut off. We do have one plant at, I believe it is Laredo, Tex., that takes antimony ores from Mexico and produces antimony ingot for sale in the United States.

The CHAIRMAN. Have you a supply of antimony lead here in Washington?

Mr. MILLER. In Utah; antimonial lead is produced in Idaho at the Bunker Hill smelter. In the United States we do have, however, a large number of deposits, more or less small, containing antimony in appreciable amounts but so mixed with other metals that it is difficult to recover as a pure antimony by the standard smelting methods.

I believe this gentleman has done some work on electrolytic methods that offers some solution.

Mr. NELSON. Yes. I would just like to suggest in a few minutes a brief survey of what has been accomplished the past 1½ years, namely the electrolytic treatment of antimony.

The CHAIRMAN. That is, you would treat this antimony lead with an electric process?

Mr. NELSON. We buy the antimony ore without any reference to lead. There are antimonial ores in quantity in this State. Two properties produced antimony ore during the last war.

Then, again, the ore that we treated in this connection came from Alaska. We have deposits that, I am told, will carry on for 50 to 100 years from now, in antimony, antimony-gold ores.

The CHAIRMAN. Alaska?

Mr. NELSON. Yes; and it occurs in British Columbia, this State, Idaho, Oregon. So that the staff which has supported this undertaking, consisting of university men, six of them altogether, who have made this possible, state authoritatively to me that there is no shortage of antimony ore to support a plant of this order.

Here we have, for instance, a complete set of plans and specifications for the plant to be erected in or near Seattle, and we are under way shortly to deliver to Mr. Miller and Mr. Raver and to any other engineers interested, for the Government, a complete set of our story on the economic side.

The CHAIRMAN. Who is going to finance your plant?

Mr. NELSON. That is something that will be entered into partly by private parties and partly, we expect, by the Government. In other words, we have now accomplished this much in the interest of science, that, for the first time, as we understand it, these men have bent over the problem of treating this particular metal electrolytically. In other words, you know about copper, electrolytic copper, electrolytic zinc, but to date electrolytic antimony has not appeared. We feel that, with the low power costs in this region and with an ample ore supply which can be had, and considering climatic conditions and the availability of this technical staff in Seattle, this is the logical thing to do.

To date there is undoubtedly—of course, we can't vouch for this information but we understand that antimony, which is a strategic metal, the actual shortage is 90 percent in this country. The ore, metal, has come from China in past years, a commodity like silk. The Chinese have been making antimony, and we have not been making antimony. Only a few hundred tons a year have come out, incidentally, to us. So these antimony ore deposits have had no market for their ore, because where there are also antimony gold ores, when they are shipped to the smelters, the smelter does not only not pay for the antimony content but penalizes the gold content, by reason of the occurrence of the antimony content.

So there the property stands, ready for production. One of our engineers is a graduate of the Michigan School of Mines and is now on his property east of Tonasket, which is in the north central part of this State, opening up that property.

We feel assured that, with the encouragement that we have been given here by Mr. Miller, and the State planning council and we have, as well, been in contact with the O. P. M. in Washington and have, from the chief of the Antimony Division in the O. P. M. office, a letter stating that they will do all in their power to encourage the production of antimony in this country.

The CHAIRMAN. I hope you have better luck with the O. P. M. than the aluminum people.

Mr. NELSON. Fortunately, our picture is one which has no involvements.

The CHAIRMAN. There is no monopoly in control of antimony. Therefore, you don't look for any obstructions to be put in the way.

Mr. NELSON. That is correct. So we feel, with this short statement, if this committee will kindly suggest (it has been done unofficially but for the record), if it has jurisdiction, to Mr. Miller and other engineers of the Government, we may have their cooperation in establishing these facts.

Senator WALLGREN. Have you called this to the attention of the O. P. M. officials?

Mr. NELSON. Yes, indeed.

Senator WALLGREN. And the War Department?

Mr. NELSON. Not the War Department.

Senator WALLGREN. Don't you think it might be advisable to call their attention to the fact that you have this process and ask them to look into it?

Mr. NELSON. We have indeed. This work has taken, of course, considerable energies by these technical men, and it occurred to us to contact Mr. Knudsen when he came through here some few weeks ago. So he referred our story, the economic story, which was put in his hands, to H. K. Masters, chief, antimony branch, Office of Production Management. And under date of August 5, 1941, Mr. Masters wrote me, the concluding paragraph of which I think is not out of order to read here:

We repeat that we shall be very much interested in your full information and are prepared to go as far as we can to assist in stimulating the domestic production of antimony. Awaiting your valued reply,

Very truly yours,

H. K. MASTERS,
Chief, Antimony Branch.

So the urgency, of course, is apparent to all the departments.

The CHAIRMAN. We are very much obliged to you for this statement for the committee, and I hope it will have the desired effect and that you get started on your production.

Mr. NELSON. Also, it is a peacetime industry. In fact, that is the way we started out, and it will be in operation after the war is over.

The CHAIRMAN. So you won't have to fire all your help when the emergency ceases.

Mr. NELSON. That is true. This is one industry that can remain in good standing for a long time.

The CHAIRMAN. Thank you very much.

Mr. NELSON. Thank you.

TESTIMONY OF RAYMOND M. MILLER, SENIOR INDUSTRIAL ENGINEER, BONNEVILLE POWER ADMINISTRATION, DEPARTMENT OF THE INTERIOR, PORTLAND, OREG.—Resumed

POSSIBILITIES OF DEVELOPING ZINC IN NORTHWEST

Senator WALLGREN. There is one other metal that I would like to discuss just briefly. I would like to have a little information on it, if possible, and that is the production of zinc in this State. If you can give us any information on that, Mr. Miller, we will appreciate it.

Mr. MILLER. At the present time, Senator, there is no zinc production in the State of Washington. However, we have in the Northwest three electrolytic zinc plants utilizing Northwest and Utah zinc ores. These plants produce a very high grade of zinc that is required for the national-defense program. High-grade zinc is required chiefly in the manufacture of cartridge brass and only, incidentally, in the defense program in brasses used for accessories to military equipment.

The CHAIRMAN. You know, don't you, Mr. Miller, where the greatest zinc production is.

Mr. MILLER. There are three principal zinc-producing districts in the United States.

The CHAIRMAN. One of them, I believe, is in southwest Missouri.

Mr. MILLER. That is right.

Senator WALLGREN. Possibly I have called the wrong witness.

Mr. MILLER. However, I would like to point out to the Senator that southwest Missouri produces what is known very largely as prime western zinc.

The CHAIRMAN. That is right.

Mr. MILLER. Whereas our northwestern production is the high grade.

The CHAIRMAN. That is right.

Mr. MILLER. The prime western is very important, also, but the two of them have their special fields.

The CHAIRMAN. They do not compete with each other. So proceed.

Mr. MILLER. That is right.

Senator WALLGREN. Do you know—as far as I am concerned, I don't know—of any shortage in this particular metal?

The CHAIRMAN. There is a shortage of brass.

Senator WALLGREN. Caused by a shortage of zinc?

Mr. MILLER. That is right, both zinc and copper, as a matter of fact. The O. P. M. Statistical Bureau has made studies to determine what the future needs for zinc would be in the manufacture of brass. They have gotten information from the War Department as to how much brass would be required and figured that back to the necessary zinc, and they have found a very definite shortage. I would not like to say at the moment what that total tonnage requirement is, since I received the information confidentially. The committee could get that from the O. P. M. directly.

The CHAIRMAN. We have it.

Mr. MILLER. But they have definitely shown a shortage.

Some months ago, in fact over 6 months ago, Northwest interests approached the O. P. M. to endeavor to interest them in Government financing of added zinc plant capacity in the Northwest.

The Bonneville Administration has discussed the matter quite fully with two separate interests and has conferred with the O. P. M. regarding the matter. Unfortunately, up to the present time we and these interests have been unable to make any progress at all in getting a plant located in the Northwest.

There are in the West a very large number of zinc deposits. These deposits contain largely lead and silver. Some of them contain zinc as a byproduct, and in some of them zinc is the principal metal, and lead and silver and gold are byproducts. But we do have a very large number of deposits that could be operated, provided there was additional capacity located in the Northwest.

In discussing the matter with the O. P. M., the zinc specialist expressed some doubt as to our ability to supply zinc to additional zinc-plant capacity, and indicated that they felt that another plant built on the Columbia River would be uneconomic; it would be uneconomic because they felt, first, that the zinc was not here, and, second, that the Columbia River was not a proper location.

However, it was pointed out to them that the very first essential in the location of an electrolytic zinc plant is the lowest possible power costs, and, therefore, that the plant must be located where power can be delivered at the lowest possible figure. There is only one place in the Northwest where that can be placed, and that is near the Bonneville-Grand Coulee transmission system. We pointed out to them that, therefore, we felt that their argument that the Columbia River was not a logical place was not sound.

We requested them to indicate to us just what they would require to convince them that additional capacity could be placed in the Northwest to produce additional zinc for the defense program.

Well, they said, "First, we must have a Government engineer to examine the deposits and determine whether those deposits are adequate."

I pointed out to them that the deposits involved were known, that the interests involved would be very glad to have Government engineers examine the deposits, if the O. P. M. would request it. However, up to the present time—and I have just recently had word from Washington—the gentlemen involved in this project have not been able to make any progress with the O. P. M. in getting them to give them, first, their approval to get a certificate of necessity and clear the project so that the R. F. C. can go ahead and finance it. I understand they are still there.

Senator WALLGREN. In your estimation, how long would it take to get such a plant in operation in the Northwest?

Mr. MILLER. It would take, depending upon the size of the operation, 8 to 9 months after work had started.

Senator WALLGREN. They could be in production by that time?

Mr. MILLER. Yes.

Senator WALLGREN. I guess that will be all, Mr. Miller.

The CHAIRMAN. Thank you, Mr. Miller.

Senator WALLGREN. I would like to call Mr. Underwood.

The CHAIRMAN. Mr. Underwood, do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. UNDERWOOD. Yes, sir.

TESTIMONY OF J. J. UNDERWOOD, WASHINGTON, D. C., REPRESENTATIVE, SEATTLE CHAMBER OF COMMERCE

POSSIBILITIES OF DEVELOPING TIN IN ALASKA

The CHAIRMAN. Take that seat, Mr. Underwood, and give your name and connections to the reporter.

Mr. UNDERWOOD. My name is J. J. Underwood. I am the Washington, D. C., representative of the Seattle Chamber of Commerce.

I am personally interested in mining enterprises in Idaho, British Columbia, and Alaska.

What I wanted to bring to the attention of this committee is the fact that there is the possibility of the development of a tin industry in Alaska. Might I go into the history of this a little, Senator?

The CHAIRMAN. Proceed as the Senator from Washington wishes you to.

Mr. UNDERWOOD. Many years ago I was associated with a company that dredged tin in Alaska. We were unable to get it smelted in the United States and had to ship it to Singapore or Swansea, England. By the time those shipments arrived, a year later, we got our money for it.

When they began talking about a tin shortage last year, I went to Alaska last summer and optioned some properties there and, with my associates, staked, I think, 100 claims, on which we discovered some traces of tin and, in some places, we thought, in paying quantities.

There was associated with me in this enterprise a man named Kingman Brewster, of Washington, D. C. We supposed that the R. F. C. was going to advance money for the development of tin but we later discovered that they made an arrangement with the South American tin companies, to put a smelter down in Texas, which we thought should be on Puget Sound.

We talked to Mr. Henderson and to Mr. Norton about it, but instead of getting any Government help, their theory was that if we could show them \$100,000 worth of tin they would advance us \$50,000 against it, if we could get some good bank to guarantee the loan. That is about the way it was, so we have thrown it up.

I think the committee, however, should know that I talked to Larry Doheny in Fairbanks, on my way out last summer—who is the agent of R. F. C.—and he told me that in many places there where they are mining plots of gold, there is tin, and if the Government would assist the miners, by putting a smelter on the Pacific coast, I believe they would develop a very important industry. I took this matter up with a smelting company, and they were interested in it for a while but later dealt with some Mexicans to get some tin from that country.

Now, under this arrangement that has been made by the R. F. C., such tin as we get will come from Bolivia, and it is an extremely important, strategic metal. It enters into almost every industry that we have. Few people realize it.

The CHAIRMAN. Do you think the tin deposits in Alaska would furnish us with the tin that we need?

Mr. UNDERWOOD. I feel quite sure they would, if they were properly developed. I know we had a few claims there that had a vein that was running 1½ percent on one end and 3 percent on the other, a drift around 100 feet, at a depth of 70 feet; a vein 8 feet wide, bellying out to 12 feet, which is 3½ percent, would be about \$30 a ton.

There are difficulties. There are transportation difficulties in shipping to Swansea, England, or now down to Texas. I think, however, it could be mined as economically as the tin in Bolivia. I have not been there but I have been informed that those tin veins are 17,000 feet high. That is exactly what I mean—17,000 feet.

The CHAIRMAN. You mean in Bolivia?

Mr. UNDERWOOD. That is right. The veins are narrow, and they are gouged out by Indians cheap labor, and then are packed on llamas for some distance, and then put on a tramway, and then, onto a railroad and then down to the coast.

The CHAIRMAN. Where is this Alaska deposit?

Mr. UNDERWOOD. Senator, there are many deposits, but the major one lies north of Nome, about 140 miles, I would say, to Cape Prince of Wales. It is right in that area.

The CHAIRMAN. How about the transportation for that?

Mr. UNDERWOOD. Transportation is fairly easy in that the Bering Sea is open to transportation about 4 months of the year.

The CHAIRMAN. Is this located on the Yukon River?

Mr. UNDERWOOD. Considerably north of the Yukon River.

The CHAIRMAN. How about land transportation? Is this directly on the sea?

Mr. UNDERWOOD. It is about 20 miles from the coast. This particular property that I have in mind—there are some that are directly on the sea, but that is about worked out. They took about 50 or 60 tons out of it last summer. I don't know what they did with it.

Senator WALLGREN. Are there any geological reports on the Alaska tin?

Mr. UNDERWOOD. Yes; but the latest reports are not yet available.

The CHAIRMAN. Has that report been finished?

Mr. UNDERWOOD. I don't think so. Philip Smith, however, for the Geological Survey, is there now.

I just wanted to bring this to the attention of the committee. It is an extremely important metal, Senator, perhaps, for this tin-can industry.

The CHAIRMAN. It is very important right at the present time. In fact, they are cutting out the tin-can industry, because we need it for other purposes right now. Thank you very much.

The committee will recess to meet at the call of the chairman. If it is necessary to meet again here, we will call a meeting of the committee. If not, our next official meeting will be on Tuesday in Salt Lake City.

(Whereupon, at 11:25 a. m., the committee adjourned, subject to the call of the Chair.)

INVESTIGATION OF NATIONAL DEFENSE PROGRAM

FRIDAY, SEPTEMBER 12, 1941

UNITED STATES SENATE,
SPECIAL COMMITTEE INVESTIGATING THE
NATIONAL DEFENSE PROGRAM,
Washington, D. C.

The committee met at 10:40 a. m., pursuant to adjournment Tuesday, August 26, 1941, in room 318, Senate Office Building, Senator Harry S. Truman presiding.

Present: Senators Harry S. Truman, chairman; James M. Mead; and Joseph H. Ball.

Present also: Hugh A. Fulton, chief Counsel, and Charles P. Clark, associate chief counsel.

The CHAIRMAN. The committee will come to order.

Will you take the seat right here, Mr. Levis, please? Do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. LEVIS. I do, sir.

The CHAIRMAN. Be seated, Mr. Levis, and give the reporter your full name and connections, please.

TESTIMONY OF WILLIAM E. LEVIS, MEMBER, PRODUCTION PLANNING BOARD, OFFICE OF PRODUCTION MANAGEMENT, WASHINGTON, D. C.

POLICY OF PRODUCTION PLANNING BOARD, OFFICE OF PRODUCTION MANAGEMENT

Mr. LEVIS. William E. Levis, member of the Production Planning Board of O. P. M.

The CHAIRMAN. What is your function as the Production Planning Board? What do you do?

Mr. LEVIS. I am a member of the Production Planning Board, which is a board of the O. P. M. Council.

The CHAIRMAN. What does that Board do?

Mr. LEVIS. It takes any assignment that is made to it by the Director General and the Associate Director General, and it gathers information in connection with that assignment and renders reports to them.

The CHAIRMAN. What sort of assignments have been made to your Board?

Mr. LEVIS. The assignment of analyzing all of the requirements of the armed services and Maritime Commission, and the assignment of determining the policy in connection with stock piles.

The CHAIRMAN. Has the O. P. M. ever made an assignment of the plight of little business to your Board for consideration?

Mr. LEVIS. No, sir.

Mr. FULTON. Was Mr. Biggers wrong in saying that you were to be appointed for the purpose of ascertaining the facts with respect to small business and how they should be treated?

Mr. LEVIS. In late February or early March, when the Defense Contract Service was a section of the Production Division of which Mr. Biggers was the director, he asked me as a member of the Production Planning Board if I would go down in the Defense Contract Service and spend some time in order that I might report to him the condition that existed there.

The CHAIRMAN. Mr. Biggers was before this committee and I have his testimony right here.¹ He said, "I was just starting to say that Levis and Mehornay, and Prof. Douglas Brown of Mr. Hillman's Division have done an excellent job of working out a program with the Army and Navy with the backing of the O. P. M. Council. That has now been informally approved and will very shortly be announced by the military services and will undoubtedly facilitate just exactly what you have been driving for and what we have been working for."

That is in answer to a question of mine, "What have you done?" We have waited 30 days now to find out whether you have done anything to help little business or not.

Mr. LEVIS. Sir, you asked me the question what I did as a member of the Production Planning Board. If you want the answer to that question, I can tell you.

The CHAIRMAN. I want the answer to that question but, specifically, I want you to tell me what you have done for little business. As Mr. Biggers stated, you were assigned with Mr. Mehornay and Professor Brown to work out some sort of a plan that was in accord with what this committee has been trying to get done. Answer me that question.

Mr. LEVIS. Do you want me to start there, or do you want me to finish the answer to the other question?

The CHAIRMAN. Finish the answer to the other question and then answer that one.

Mr. LEVIS. In carrying out the request that Mr. Biggers made, I become familiar with what the duties of the Defense Contract Service were, so that early in July Mr. Hillman asked me if I would work with Dr. J. Douglas Brown, in determining what procurement changes might be made in the armed services' procurement activities so as to relieve priority unemployment. Dr. Brown and Mr. Mehornay and Mr. Nehemkis and Mr. Novick, Mr. Lynch, and myself worked on a report that Mr. Brown submitted to Mr. Hillman on July 19. After that report was received, Mr. Knudsen, on July 24, appointed me as his and Mr. Hillman's personal representative to represent them in connection with matters pertaining to Defense Contract Service.

Following that, together with Dr. Brown and Mr. Mehornay, we submitted to Mr. Knudsen and Mr. Hillman a formal report on July 31, in which we recommended that the armed services share their part of the responsibility in connection with the priorities situation.

The CHAIRMAN. Did they accept that recommendation?

¹ See *supra*, pp. 2076.

Mr. LEVIS. Do you want me to answer your question, or do you want me to give you a——

The CHAIRMAN (interposing). Answer my question and then go ahead.

Mr. LEVIS. Yes, sir; they did.

The CHAIRMAN. All right, proceed.

Mr. LEVIS. And that the Defense Contract Service be made a staff function of the O. P. M. Council, and that its duties be broadened by giving it an additional objective of analyzing and recommending changes in armed service procurement procedure; that the budget for the Department be increased in order that it might fully man its offices; and that a committee of the armed services be appointed to work out in detail the schedules which we recommended.

The O. P. M. Council approved that, and as a result of their approval, the committees were appointed by the armed services, and, together with Mr. Mehornay and Dr. Brown, we worked out a completed schedule, which was submitted to the O. P. M. Council on August 14, and that led to the final enactment of the policy which has been submitted to the 815 purchasing offices of the Army, carrying out these 3 schedules suggested. The Navy will issue a press release, I understand, which will confirm the policy that was adopted by the O. P. M. Council, which will enable them to likewise carry out these policies that we feel will permit the placing of contracts with small businesses, co-ops, or associations that might be formed to take on even prime contracts or subcontracts.

Mr. FULTON. Mr. Levis, did you familiarize yourself with the matters that were being brought out by this committee with respect to the Defense Contract Advisory Service?¹

Mr. LEVIS. I read Mr. Biggers' testimony, Mr. Mehornay's testimony, and Mr. Browning's testimony before I came over here.¹

Mr. FULTON. And had you read it before?

Mr. LEVIS. No, sir.

Mr. FULTON. So that you had paid no attention to it when you were working out this matter?

Mr. LEVIS. I was not working out this matter, sir. I was working as a personal representative of Mr. Knudsen and Mr. Hillman in pretty much of a clerical and negotiating capacity, really putting the words into these sections and negotiating out those words with representatives of the armed services so as to get a schedule that all of us hoped would be more operative than the procedure that had been carried out in the past.

Mr. FULTON. Did you note that Mr. Biggers said that the referment was for the purpose of putting into effect some of the recommendations of this committee?

Mr. LEVIS. That is right.

Mr. FULTON. And yet you didn't think it worth while to read the committee's testimony?

Mr. LEVIS. I read the testimony of Mr. Biggers and Mr. Mehornay.

Mr. FULTON. But you read them only yesterday or the day before.

Mr. LEVIS. I read it in detail then, but I was familiar with it, from what I saw in the press and what they told me.

¹ See Hearings, Parts 5 and 6.

ESTABLISHMENT AND FUNCTIONS OF DIVISION OF CONTRACT DISTRIBUTION,
OFFICE OF PRODUCTION MANAGEMENT

Mr. FULTON. Have you now put into effect the policy that this committee suggested some months ago, of encouraging associations of small businessmen through either corporations or pooling arrangements?

Mr. LEVIS. The President has; yes, sir.

Mr. FULTON. And that policy has now been found feasible?

Mr. LEVIS. The President has created a new division of the O. P. M. by the Executive order which he issued on September 4, and has put Mr. Floyd B. Odum in as the director of that division.

Mr. FULTON. And is it now expected that businesses which pool through a corporation or through an association will be permitted to have prime contracts?

Mr. LEVIS. No; the Army and Navy have approved a procedure that permits that.

Mr. FULTON. Is that procedure one that is going to be effective?

Mr. LEVIS. I believe it will be; yes, sir.

Mr. FULTON. So that you think that that recommendation of the committee is one that can probably and will probably be followed, is that correct?

Mr. LEVIS. Yes, sir; it is being followed. We certified yesterday the first certification under it.

Mr. FULTON. Did you find in your examination why it was impossible that that could have been followed 6 months ago, when it was first suggested?

Mr. LEVIS. The procurement procedure of the armed services didn't permit it, sir.

Mr. FULTON. And will you tell us the detail of that procurement procedure which prevented the possibility of that being done at the time?

Mr. LEVIS. As I understand it, the Comptroller General will only approve payment on a contract where that contract is awarded under a procedure that gives it to the lowest bidder.

Mr. FULTON. If the lowest bidder happened to be a corporation which had been organized by an industry to pool the facilities of a number of small men, was there any reason why that company couldn't have been given the contract 6 months ago?

Mr. LEVIS. No, sir; in many instances it was, like in the York, Pa. case; the Shenandoah Valley case, and a number I have heard of.

Mr. FULTON. We have heard of those, too, and do they in the aggregate amount to as much as one or two million dollars?

Mr. LEVIS. Well, the subcontracting cleared through the Defense Contract Service's offices and the contracts placed with those corporations or associations or pools through their 36 offices in the month of August amounted to \$97,000,000 in that 1 month.

Mr. FULTON. By pooling?

Mr. LEVIS. No.

Mr. FULTON. As a matter of fact, did they amount to \$1,000,000?

Mr. LEVIS. I couldn't answer that, sir.

Mr. FULTON. In any event, now it is decided to try to put it out in such a way that those companies which pool their resources will obtain

equal consideration with large companies which are as large as the pool of the small ones, and, so far as you know, there is no reason at present why they should not be able to get contracts?

Mr. LEVIS. Well, now, it is rather technical. There are three schedules which we prepared. Schedule No. 1 provides that where unemployment exists in an industry or industries, a community or communities, the Labor Division of O. P. M. will certify to the Contract Distribution Division of O. P. M. that this condition exists, and the Contract Distribution Division will then with their field engineers investigate to determine if that is so, and if so, they will request O. P. M. to certify to the armed services the condition, and stipulate the remedy which they desire to have applied. And the remedy, in accordance with the armed services' directive, is a number of things: (a) That procedure for the armed services negotiating a contract at prices up to 15 percent increase above the lowest quotation received, or the last price paid; and (b) the placing of a trial order on a cost-plus-fixed-fee basis—

Mr. FULTON (interposing). I don't like to interrupt, but I was talking about pooling.

Mr. LEVIS. That is the next subject, sir; or (c) the placing of a contract with a responsible defense association or corporation that may be organized from manufacturing establishments of a community or industry, to better enable the community or industry to undertake contracts or subcontracts.

Mr. FULTON. Well, now, does that mean then, Mr. Levis, that until and unless all those different things have been done, that the pooling of the facilities of a number of small business concerns will not be treated as one organization for contract purposes?

Mr. LEVIS. No; there never has been any restriction on its being treated that way.

Mr. FULTON. Except that I have been told that in at least one instance, one of the procurement officers stated that it was illegal under regulations.

Mr. LEVIS. Oh, it has never been illegal to do what they did in York, Pa., or it has never been illegal to do what was done in the Shenandoah Valley.

Mr. FULTON. Of course, it wasn't illegal, but he considered it contrary to regulations; he referred to it as illegal, but it was contrary to regulations because the newly formed corporation, which would be the pooling of the resources of the several companies, was not that existing corporation which could conform to certain specified requirements, such as the fact that it, itself, directly owned or held under lease certain square footages of warehouse space and that sort of thing.

Mr. LEVIS. That has never been necessary, sir. You had to have certain financial responsibility, and you had to give a bond, and you had to stand for inspection, and you had to be involved in the latent defect clauses, but if you were a reputable association or co-op or pool that had that standing, there was no reason why, if you were a low bidder, that you couldn't get a contract.

The CHAIRMAN. Does that 15 percent clause mean that the small organizations that are trying to get this business will be given a chance, even if their bids are 15 percent higher?

Mr. LEVIS. Yes, sir.

Mr. FULTON. But on what conditions?

Mr. LEVIS. On the condition that there is unemployment resulting from the impact of priorities because of the failure to obtain materials because those materials are being used by the armed services for defense purposes.

The CHAIRMAN. If you carry that out, you are going to get at the fundamental difficulty we are facing.

Mr. LEVIS. That is what we believe, sir.

The CHAIRMAN. There are thousands and thousands of little businesses that are quitting and going to quit and fold up and put thousands of people out of work on account of priorities, unless some such procedure as you have outlined there is followed.

Go ahead and give us a further explanation.

Mr. LEVIS. Senator, I felt like this about it, that it wasn't any different than if a salesman in our can business went out to get a can order and promised the man that if he gave it to him, he would give him the lubricating-oil business of our glass factory, and after he had the can order in his pocket, he went to the purchasing agent and said, "I want to give this fellow this lubricating oil order," and the purchasing agent said, "I am sorry, I have already placed it."

That is just what happened. We worked these things up in defense contract branches. We took the little fellow by the hand and led him over to the purchasing agent, but the purchasing agent had already placed the order.

Mr. FULTON. Mr. Mehornay testified here that he didn't have the authority to offer advice, except in those instances where it was requested, to procurement officers.¹

Mr. LEVIS. Mr. Mehornay testified before we had O. P. M. Council, consisting of the Director General and the Associate Director General, Secretary of War, and the Secretary of the Navy, approve as to policy these specific schedules.

The CHAIRMAN. Then that situation has been changed since Mehornay testified.

Mr. LEVIS. That is right, and these schedules were not in the hands of the Surgeon-General's office until night before last.

Mr. FULTON. But this question of your saying you took the small businessman by the hand and took him over to the procurement office—

Mr. LEVIS (interposing). We hoped he might get an order.

Mr. FULTON. That wasn't even possible up until at least the time Mr. Mehornay was asked by this committee whether he had authority to offer advice on those matters, and testified that he had no such authority at that time.

Mr. LEVIS. He had no authority to ask the procurement officer to give the order, but he had the authority to survey anyone's plants and go with that someone to the armed services' procurement officer and tell him he believed this plant could perform the work.

Mr. FULTON. But he had no authority to say to the procurement officer, "What contracts are you presently engaged in letting?" and then to tell the procurement officer, "I think Mr. A, Mr. B, and Mr. C, small businessmen, can do that job."

Mr. LEVIS. He had authority to say that but he had no authority to get anything done about it.

¹ Hearings, Part 5, p. 1373.

Mr. FULTON. As I understood him, he said he had no authority to go to them except in cases where they asked his advice.

Mr. LEVIS. No; he submitted people to them—that has been a common practice for several months.

Mr. FULTON. You mean he had authority to introduce someone to them and say that person was highly regarded by the Defense Contract Advisory Service?

Mr. LEVIS. And they had investigated his plant and felt his tools and floor space and personnel could make the order.

Mr. FULTON. And now you have given what additional authority to him, or to the Division?

Mr. LEVIS. We have given two types of authority, sir: One, upon this certification, where the priority unemployment exists, we have a right to then certify to the armed services that it does exist and prescribe the remedy.

Mr. FULTON. Let's take the first angle of it: The certification that the priority dislocation to his civilian business is great. To whom does the small businessman apply for that certification?

Mr. LEVIS. The United States Employment Office originates it.

The CHAIRMAN. That is the State Employment Office in the State?

Mr. LEVIS. It is the Federal Employment Office in the State.

The CHAIRMAN. You mean the State set-up of the Federal Employment Offices does the certification?

Mr. LEVIS. That is right.

Mr. FULTON. Take the case of the specific man in, say, any specific city, selecting one at random; suppose you have a man in Pittsburgh who operates a small plant and he can't get materials; what is his first step? To whom does he go?

Mr. LEVIS. It really won't work that way, sir. We are gathering through the Labor Division of O. P. M. data regarding this unemployment before it exists.

Mr. FULTON. There are a lot of people who have it right now. You won't have to bother gathering it because a number of them are writing in to us to the effect that their plants are about to close.

Now, taking one of those men in Pittsburgh who has a plant, with 300 people dependent on him, what does he do? To whom does he go?

Mr. LEVIS. He can either go to the United States Employment Service—

Mr. FULTON (interposing). In Pittsburgh?

Mr. LEVIS. In Pittsburgh; or he can go to the Contract Distribution Office in the Federal Reserve banks in the 36 districts.

Mr. FULTON. When he goes there, what happens? What is the first step that he does and what is the first step they do in response to his problem?

Mr. LEVIS. I don't know what that procedure will be. It isn't anything I am setting up, but as a practical matter, what we contemplated would be set up would be that we would investigate immediately and if the condition as he represented it were so, we would certainly bring it to the attention of the armed services that the condition exists and specify one of the several remedies provided for in schedule 1.

Mr. FULTON. When you say "we," do you mean the United States Employment Service in Pittsburgh?

Mr. LEVIS. No; the O. P. M.

Mr. FULTON. That is where the man is now. You say that is where he should go first. When he is there, what happens?

Mr. LEVIS. The United States Employment Office certifies to the Labor Division of O. P. M. that this condition exists.

Mr. FULTON. Is that done by the local office in Pittsburgh?

Mr. LEVIS. Yes, sir.

Mr. FULTON. And they send a written certification to the Washington office of the O. P. M.?

Mr. LEVIS. As I said, I haven't worked out that regulation as to how it is done, but as a practical matter that is the way it is going to be done.

Mr. FULTON. Suppose they refuse to certify it, perhaps due to a mistake on their part; to whom would he then apply?

Mr. LEVIS. He would go to the Contract Distribution Division's office in the 36 Federal Reserve districts.

Mr. FULTON. And if he goes to that Pittsburgh office, what do they do?

Mr. LEVIS. They would advise us to have the Labor Division make the certification.

Mr. FULTON. So that they would write Washington that the Labor Division of the O. P. M. should send someone to Pittsburgh to certify that, or should have someone in Pittsburgh go and make an examination of it?

Mr. LEVIS. Yes, sir.

Mr. FULTON. And is there any procedure whereby that is expedited and promptly done? Is there a procedure set up now for handling those things within a prescribed limit of time, such as 24 hours or 48 hours?

Mr. LEVIS. The procedure will have to be refined, but the first cases are now going through. The engineers are in the field now getting Meadville, Pa.; Mansfield, Ohio; Evansville, Ind.; Manitowoc, Wis.

Mr. FULTON. And Oneida, N. Y., I think is another.

Mr. LEVIS. Yes.

Mr. FULTON. Well now, those are communities, I understand, which are largely blighted by reason of principal businesses—

Mr. LEVIS (interposing). In the *Manitowoc* case it is an industry.

Mr. FULTON. But now suppose that you must have one man in Pittsburgh; I was trying to find out how long it would be before he could expect to have any certification.

Mr. LEVIS. There are no conditions provided in which we recommend to the armed services that they give Pete Smith in one community relief. It has got to be a community distress or an industry distress.

Mr. FULTON. In other words, then, an individual company that has orders for a commodity even as common as steel, and which can't get it, and which has 300 men about to be thrown out of employment, can't expect that there is any agency set up today to which it can go for the purpose of obtaining that kind of certification.

Mr. LEVIS. There is nothing in here that takes care of the individual case. In other words, if that material isn't short to an industry or short to a community, then the individual must have some responsibility. If everyone else in the regiment is in step but he, it would seem that—

Mr. FULTON. (interposing). Just when do you think that an industry is short? What percentage of it has to be unable to get material? Suppose we take a hypothetical case of an industry that has 5 big plants that have perhaps 60 percent of the capacity of that industry and they are getting their materials and not complaining, particularly, and the other 40 percent is divided up among 100 small outfits which aren't getting their materials; now, is there any criterion by which you can determine that perhaps the 60 percent are getting it and that the 40 percent should be dislocated?

Mr. LEVIS. Priorities don't apply that way, sir.

Mr. FULTON. Priorities don't apply that way but sometimes inventories do, don't they?

Mr. LEVIS. They haven't; where priority has been applied inventory has been given consideration.

Mr. FULTON. But there are cases, are there not—at least there are a great many that are called to our attention, and I think the O. P. M. has probably had similar cases called to their attention—where companies, through no fault of their own, but because of priority, are not being able to get materials and get the industry itself at least operating, and as I understood you, there is no consideration at all being given to that phase at this time.

Mr. LEVIS. Not to an individual company, but I would say if there are 50 companies in an industry and 5 of them had distress, that this consideration would be given. I don't know whether it would stop at 10 percent; it might go to 6.

Mr. FULTON. Does that mean the small businessman might as well not go to the United States Employment Office, because his true remedy is to get together with the rest of his fellow-industry men?

Mr. LEVIS. I can't tell you that, sir. I am only speculating on the procedure that I think would be practical. I have nothing to do with the working out of the procedure that will actually be used.

Mr. FULTON. The committee was interested only in the practical aspect of whether the people who need these materials, and who need these contracts, have any practical remedy by which they can get them. As I understood you, one won't have that by making an individual complaint, because that won't be given consideration, and I wanted to know how he should go about it. Should he go and try to interest the trade association of his industry and make a general complaint that his industry is being affected?

Mr. LEVIS. I can't answer that, sir, because I know the methods of doing it are being worked on by someone else and his method will prevail, I presume.

The CHAIRMAN. Who is doing that? Who is making up the methods of procedure?

Mr. LEVIS. Mr. Odum, the Director of the Contract Distribution Division.

The CHAIRMAN. I don't suppose he has been in charge long enough to intelligently tell this committee what he is going to do, but I hope that Mr. Odum immediately gets that situation worked out, because this committee will ask him at a later date just what sort of progress he has made on it.

Mr. LEVIS. I would like not to volunteer anything, sir, but I think in connection with your questions, you might be interested in a

matter like this. Regional bidding, say to the Army's 18 ordnance offices, asked for a bid on an ordnance item; or a man out of the region might have gotten the order as a low bidder after the details of machine-tool specification, floor space, and everything were worked out by an ordnance officer and a bidder in the region. The only way that you could place that in the region was with the permission of the Secretary. Under our procedure No. 5 of schedule 2, sent out by the Army, "where regional bidding is requested and production facilities permit, awards will be restricted to regional bidders unless otherwise approved by the head of the Department."

The CHAIRMAN. That is a step in the right direction, also.

Mr. FULTON. Would you explain how that operates in a practical way with respect to a specified division or region of the country? Would you take a concrete example and show us how it starts, exactly how it proceeds, and how this bidding is accomplished?

Mr. LEVIS. I don't know that I could tell it technically, sir, but when there is a bid to be placed, say, for shell cases, the 18 ordnance offices know that and they go about among the people who might make them in their region to determine who could make them promptly and satisfactorily, and then if the bids, as they formerly worked, came in from New York and that was all worked out in Cleveland with a prospective manufacturer, if the bid from New York were lower it would be placed in New York.

Now, if it is worked out in Cleveland, it will be placed in the area unless they are instructed otherwise. I would like to say, in addition to that, that our schedule 8 provides:

No machine tool delivery or priority, therefore, is to be given to a contractor under existing contracts where the commitment therefor has not been made in the contract or under new contracts unless and until the contractor shall satisfy the contracting officer and shall certify that no known qualified sub-contracting facilities are available within a reasonable distance except in the case where limited new tools to be tabulated by him are considered essential by the contracting officer to complete a production or assembly line.

Mr. FULTON. That was recommended by this committee some months ago and, as I understood, it was put into a directive of Under Secretary of War Patterson, I believe, back in May.¹

Mr. LEVIS. No, not this, because I recommended this myself.

Mr. FULTON. Did he not have a directive to the effect that there should be no authorization of new tools without, I believe, the words were "due study" of the possibility of using existing businesses?²

Mr. LEVIS. The problem was, there were too many generalities and not enough specific.

Mr. FULTON. That is right. Our suggestion was that perhaps there ought to be some way of checking into the procurement agencies and finding if they were doing that.

Mr. LEVIS. But you can't get a thing as complicated as this worked out by the power of suggestion.

Mr. FULTON. No; but the specific recommendation that we were making was that the Defense Contract Service, or some other agency of the Government, perhaps the War Department or the Navy, should establish some means of checking up on the procurement officers through experts for the purpose of finding out whether they were in

¹ May 20, 1941, See Exhibit No. 68, Hearings, Part 5, appendix, p. 1473.

² Ibid.

fact complying with that kind of requirement. Now, is there such a means today?

Mr. LEVIS. It has been purely voluntary, sir.

Mr. FULTON. What do you mean by that?

Mr. LEVIS. The armed services are anxious to share their part of this responsibility, and have set up their own Contract Distribution Divisions.

Mr. FULTON. As I understand it, there was expected to be in the War Department a division or bureau set up for the purpose of determining that these criteria were being followed. Has such a division been set up?

Mr. LEVIS. Yes, sir; the regulation that was sent out that I referred to provided for that.

Mr. FULTON. And do the contracts now have to clear through that division before they are finally awarded?

Mr. LEVIS. I can't answer that, but the regulation is clear and is dated September 5, issued by the War Department.

Mr. FULTON. What we were wanting to know was whether some definite plan had been worked out whereby either in the War Department itself or in the O. P. M. there would be a check on these procurement officers for the purpose of making certain that they actually do follow these recommendations as to subcontracting, and as to not approving new tooling and various other matters that were suggested some time ago.

Mr. LEVIS. The regulation as sent out by the War Department on September 5 definitely provides for their procedure in the handling of this.

Mr. FULTON. Suppose they find that a given procurement officer has not in fact followed that, in that they find after an expert study that he could have used subcontracting and didn't; what procedure has been set up to take care of that situation?

Mr. LEVIS. That is up to the War Department, sir. I wouldn't know what the procedure would be.

Mr. FULTON. Has the O. P. M. now set up any procedure for checking into that kind of thing and at least advising the War Department that, in its opinion, this particular situation is one where subcontracting could and should have been used?

Mr. LEVIS. Oh, yes; the O. P. M. advises the War Department as to the possibilities of subcontracting.

Mr. FULTON. Do they advise the procurement officer or do they advise this new bureau that is to pass on whether the procurement officer is doing a good job?

Mr. LEVIS. They will advise the procurement officer in the field through their office in the field and they will also advise their new bureau in Washington.

Mr. FULTON. You see, our fear was, if you simply advised the procurement officer and he had already disagreed with you, that he would file it and that might be the end of it, but now you advise the new division of the Army in Washington; is that right?

Mr. LEVIS. I understand that is the procedure. I have nothing to do with that procedure. I am simply speculating with you on it.

Mr. FULTON. Haven't you studied that procedure in order to be able to know whether this program is a workable one?

Mr. LEVIS. The procedure has to follow the program, sir.

Mr. FULTON. But a program isn't much good, is it, without some practical procedure which will reach the result that the program is headed for?

Mr. LEVIS. It is largely a state of mind whether they want to do it or not, and I believe they want to do it.

Mr. FULTON. Would you characterize this new program as a state of mind?

Mr. LEVIS. No; I say it is largely a state of mind whether they want to carry it out in detail, and I believe they want to carry it out.

Mr. FULTON. What the committee were interested in is, have you set up a procedure that will assure its being carried out, and if not, how can we discover whether it is being done?

Mr. LEVIS. I haven't, sir.

The CHAIRMAN. If you haven't, this committee will see whether they operate or not. We will look into it. They had better carry it out.

Mr. FULTON. Would you proceed to describe the methods that have been formulated for the purpose of trying to assist in this spreading of business?

Mr. LEVIS. The third method provides for a statement by the contractor covering a number of matters, so that the Contract Distribution Section and the procurement officers of the armed services have this information available during the period of negotiating the contract, and those are the three schedules.

Mr. FULTON. Is there now a provision to the effect that the contractors who do more subcontracting are to be favored over contractors who do less?

Mr. LEVIS. There is a section of the schedule wherein they will weight favorably the percentage of subcontracting.

Mr. FULTON. Will you explain practically how that weighting is done?

Mr. LEVIS. They have authority to weight it. In other words, if contractor A were to bid \$1,100 and subcontract 60 percent, and contractor B were to bid \$1,050 and subcontract 10 percent, they could give it to contractor A for the \$50 extra because of the larger amount of subcontracting that he would do.

Mr. FULTON. Would contractor A under any procedure you have set up be entitled to that bid?

Mr. LEVIS. Yes.

Mr. FULTON. Suppose he didn't get it, what remedy would he have?

Mr. LEVIS. What remedy would he have?

Mr. FULTON. Yes.

Mr. LEVIS. I don't know.

Mr. FULTON. I asked you first if he was entitled to it and you said "Yes." Now if he is entitled to it and doesn't get it, how would he go about getting what he is entitled to?

Mr. LEVIS. I didn't state he was entitled to it. I said the procurement officer couldn't previously weight that and give it to a higher bidder. Today he has permission to do so.

Mr. FULTON. How would you go about finding out whether he had done his duty in that respect? Would the example you gave be one where he should give it to a higher bidder?

Mr. LEVIS. I can't tell you whether he will do so. I can only tell you the regulation we worked out that permitted him to do something he didn't previously have authority to do.

Mr. FULTON. But there are no standards set up whereby you can go back over that and say to him, "Under this new set-up you should have given it to A, and you didn't do it; you gave it to B"?

Mr. LEVIS. I can't answer that, sir.

Mr. FULTON. Practically, what I had in mind is that A and B are both men interested in this contract, and each of them, whichever one doesn't get it, will feel that he hasn't been given a fair deal, and I wanted to know whether you had set up any criterion by which that could be determined.

Mr. LEVIS. I only tried to set up a procedure that would make it possible to do it where it wasn't possible before.

Mr. FULTON. But if it isn't done by the procurement officer, there isn't any procedure set up to do anything about it, is that right?

Mr. LEVIS. I presume the War Department would set up a procedure of that kind. I have nothing to do with that.

The CHAIRMAN. The only way this procedure can be carried out is by order from the Secretary of War and Secretary of Navy to these fellows to carry out your recommendations; isn't that correct?

Mr. LEVIS. They have issued that order.

The CHAIRMAN. They have issued that order?

Mr. LEVIS. Yes, sir.

Mr. FULTON. But the recommendations are so general that it is pretty difficult when you take a specific case to determine the application of those.

Mr. LEVIS. They are very broad, sir, as compared with what has previously been authorized.

Mr. FULTON. Oh, yes; there has been progress. We were suggesting that these things should be done, but we wanted to know whether you could get it a little more definite and whether you could really get it to a point where Mr. A in Pittsburgh knows what his rights are, knows where to go and how to proceed to get whatever are his true rights, because that is what Mr. A in Pittsburgh is interested in; it is what the people in Pittsburgh who work in his plant are interested in, or in any other community in the country.

Mr. LEVIS. I can't answer that, sir. The thing has been set up by the Executive order to create a division, and the procedure has been set up and approved by the O. P. M. Council, and has been announced to the armed services, and I believe it is going to work.

Mr. FULTON. The procedure is very good, the order is very good, but I was talking now about what the President undoubtedly expected you to do, and that is to go ahead and make it work by some specific, practical means of getting these men who are going to have their plants closed in touch with the people they should be in touch with, and informed of their rights.

Mr. LEVIS. His Executive order covered all of that fully and provided the means for carrying it out.

Mr. FULTON. Then let's go back to that example. Here is a plant about to close. Just what is he to do? The Executive order sketches the general program, but what is Mr. A to do when his plant is about to close? Whom is he to contact?

Mr. LEVIS. I can't answer that, sir.

Mr. FULTON. If you can't how can he?

Senator MEAD. Mr. Levis, I have a matter that I would like to bring to your attention. When we were out on the coast checking on various small industries, we located several plants. One of them was in the business of manufacturing airplanes. They had an order for the Dutch East Indies and they were just finishing that order. It occurs to me they were going to close the plant, lay off the workers, because the airplane industries of the coast that had Government contracts hadn't, or probably wouldn't, give them a subcontract and they were unable to find any relief by communicating with Washington. As I recall it, this was a well-set-up manufacturing plant with ample tooling and skilled personnel, and they were completing the last order of trainers for the Dutch East Indies, and yet they didn't have 10 cents worth of work, either from the industries that had these huge contracts, or from any of the procurement agencies at Washington.

Now, what are we going to do in a case like that, when we know that a plant is closing—a plant that is so vital to the production of such a vital need? Does your agency learn about that? Do you have any method of investigating a case of that kind?

Mr. LEVIS. Yes; I presume that the procedure that will be carried out will be just what we have analyzed.

Senator MEAD. I can't see how the procedure will help him unless there is someone to police the procedure.

Mr. LEVIS. I haven't anything to do with that, sir. The President has provided the procedure and he has provided the method of policing it in his Executive order.

Senator MEAD. That is the trouble, the procedure is there, but the administration, the enforcement, is evidently lacking, and, therefore, there will be ample means for big industry to secure their materials, their equipment, and their contracts within the procedure, and the other fellow, the little fellow, will have as his consolation the procedure but no contract. So that it seems to me that there must be somebody to carry out the philosophy contained in that Executive order. Here is a plant closing. Mr. Chairman, did you hear from that aviation plant recently?

The CHAIRMAN. Yes; I did. I had a letter from them yesterday.

Senator MEAD. And they have no contracts?

The CHAIRMAN. They are still on the point of closing up.

Senator MEAD. We have another case at Oneida, N. Y., an industry there that has been in existence for, I don't know, perhaps a century, and my last information from them is that they are about to close that plant because of failure on somebody's part to give them the hearing they need. If I remember correctly, we heard a manufacturer of aluminum and gray steel products at our hearings in Los Angeles. He told us that he had some five or six hundred skilled workers, and he had already laid off for an indefinite period 150 of them; that he formerly was allotted all of the raw material that he needed in the manufacture of small parts for the aviation industries of the coast. He said two things had happened to him: Priorities at Washington had cut him off from all raw-material markets; and the aviation industries of the coast have denied him the subcon-

tracts he used to enjoy, so that official Washington and the aviation industry have ganged up on him and have just about forced him to close his plant.

Now he is looking for the policeman in the case, somebody who can say, "Here is the Executive order. Here is the procedure." As it is, he can say, "Both are on my side but I am not getting the business." There is no one to carry it out in a practical way. It is perfectly all right to issue these procedures, and one thing and another, but it is another question to find the victim and defend him.

Mr. LEVIS. You ought to turn it around, sir. Until we had the procedure, it didn't do any good to go find him. Now we have a procedure that if we find him, we might be able to work it out.

Senator MEAD. Who is going to find him?

Mr. FULTON. Do you have any difficulty finding him? We get letters every day, and if you do have any difficulty, we will be glad to send them over.

Mr. LEVIS. No, sir; but we certify him, and there are a lot of fellows getting service through the Defense Contracts Division. We have stepped it up from \$20,000,000 worth of contracts placed through those offices in June to 50 in July, 97 in August, and the procurement procedure didn't start to work until yesterday. I mean, it isn't getting worse.

Mr. FULTON. We hope in the next month it will be 200 and the month after that 400,000,000, and that will be only thirty-odd percent, at that.

Mr. LEVIS. You don't hear about the fellow who gets the order; you hear about the fellow who doesn't get it, and we took care of those to the extent of 97,000,000.

Mr. FULTON. But 97,000,000 is a small percentage of the total of the business those small companies represent, and of the total in the country, is it not?

Mr. LEVIS. That is not my job, sir.

Mr. FULTON. Don't you know that to be a fact, sir?

Mr. LEVIS. No, sir; I don't.

Mr. FULTON. After studying it 3 or 4 months?

Mr. LEVIS. I didn't study that.

Mr. FULTON. You studied the problem but you didn't look to see—

Mr. LEVIS (interposing). I didn't study anything other than the changes in procedure that I believed might be helpful, and I believe they are.

The CHAIRMAN. I didn't understand what your business connection was.

Mr. LEVIS. I was in the glass business.

The CHAIRMAN. Were you an executive in a glass company?

Mr. LEVIS. Chairman of the board of Owens-Illinois.

The CHAIRMAN. We are going to have in charge of this department Mr. Odum, who is a Wall Street financier, so I understand. We have just gotten rid of a furniture dealer. Maybe we will eventually get around to find out how to work this for little business.

Mr. LEVIS. I never was anything in that set-up. I never was part of the division.

The CHAIRMAN. I hope we will. I think this is one of the vital things in this defense program, and if we don't get it solved, we are in danger of having more unemployment than we had when we started.

Did you have another question, Senator?

Senator MEAD. Not a question, exactly, but it seems to me, Mr. Levis, that in existing contracts wherein the work hasn't been started, those contracts could be recalled.

Mr. LEVIS. Procedure provides for the reopening of an existing contract.

Senator MEAD. All right, and they ought to be relet, based upon the ability of the contracting party to guarantee subcontracting of a certain fairly substantial percentage; and in order that that might be encouraged, he ought to be allowed an additional sum of money. Now, what are you doing with reference to contracts that have already been let, and yet where the work hasn't been completed or started? Are you calling them back in and insisting upon further subcontracting? Is that actually being done according to procedure?

Mr. LEVIS. The procedure provides for the reopening of an existing contract where there are tools in the community, or in the general geographical location, that are not occupied, in preference to acquiring new tools to complete the business.

Senator MEAD. Are these contracts being recalled and relet?

Mr. LEVIS. I don't know that they are, sir. The procedure was put in the mail last Saturday night, and I can't tell you what has happened.

Senator MEAD. Who could keep us informed as to whether or not they are recalled and relet?

Mr. LEVIS. I would presume the War Department. It is their procedure. We are only assisting them in working it out.

Senator MEAD. What we want to do is to find out from the man who is actually doing the job how much of the job he is doing.

Have you any information with reference to the Allotment Section that is set up at Wright Field in Ohio for the allotment of materials for the airplane industry? It is my understanding that they have a central office located there and that the representatives of the aviation industries go there for their allotment of material.

Mr. LEVIS. I don't know anything about that, sir.

Senator MEAD. It is probably there that we will find some of the reasons behind the failure to allot material to the smaller industries.

Is any effort being made to cut down the total volume of orders for supplies and materials so that the smaller fellows can participate in them?

Mr. LEVIS. Yes, sir; the procedure provides for that.

Senator MEAD. And that is to be carried out by the procurement officers of the War and Navy Departments?

Mr. LEVIS. It has been, even without this procedure.

Senator MEAD. Well, it may have been, but it has got plenty of room for improvement.

Mr. LEVIS. There is room for improvement in everything, sir.

Senator MEAD. Yes; but so much so in this instance that one wouldn't even believe they had started in that direction.

That is all that I have.

The CHAIRMAN. In about 30 days we are going to ask Mr. Odium to come up here and tell us exactly what he has done to get this

thing implemented and to make it work, and I hope it will be working successfully and that the \$97,000,000 will have grown into some \$900,000,000.

That will be all, Mr. Levis. Thank you very much.

For the benefit of the record, I have a letter from the mayor of Los Angeles, Calif., one paragraph of which I am going to read:

Please be advised that the conditions to which public attention was directed have been corrected.

That is the condition in which the Los Angeles Harbor¹ was inadequately guarded against anything that might happen to it. It had an inadequate police force from every point of view.

The mayor goes on to say:

Two boats manned by police officers are now patrolling the inner harbor. These boats have been supplied by the harbor department of the city of Los Angeles. Sufficient time has not elapsed to permit the securing of the boats that will be permanently used for patrol work. After diligent inquiry, representatives of the city have been unable to locate for purchase the kind of boats they want. However, as soon as they can be found, three boats will be purchased and the police patrol system will be continued day and night, with one boat operating in the daytime and two at night in the inner harbor.

And he goes on to say that the chief of police has furnished him a report that assures him he is carrying out every recommendation the committee made to the city.

I will have this made a part of the record.

(The documents referred to were marked "Exhibit No. 116" and are included in the appendix to Hearings, Part 6, on p. 1954.)

Senator MEAD. That is a very important fact and it may have far-reaching consequences in the protection of our defense program.

The CHAIRMAN. There is no question about that.

Mr. Arthur Bunker will be the witness before the committee on Monday. Senator Mead will preside as chairman at that meeting, as I will not be in town on that day. The subject will be aluminum.

The committee will now stand recessed until 10:30 o'clock Monday morning.

I am authorizing Mr. Fulton to place a statement on his Alaska trip from Senator Brewster in the record at this point.

(The statement referred to was marked "Exhibit No. 117" and is included in the appendix on p. 2280.)

(Whereupon, at 11:40 a. m., an adjournment was taken until 10:30 a. m., Monday, September 15, 1941.)

¹ See Hearings, Part 6, for testimony concerning defense protection for the Los Angeles Harbor area.

INVESTIGATION OF NATIONAL DEFENSE PROGRAM

MONDAY, SEPTEMBER 15, 1941

UNITED STATES SENATE,
SPECIAL COMMITTEE INVESTIGATING
THE NATIONAL DEFENSE PROGRAM,
Washington, D. C.

The committee met at 10:40 a. m., pursuant to adjournment, Friday, September 12, 1941, in room 324, Senate Office Building, Senator James M. Mead presiding.

Present: Senators James M. Mead (acting chairman), Carl Hatch, Joseph H. Ball, Mon C. Wallgren, and Tom Connally.

Present also: Hugh A. Fulton, chief counsel, and Charles P. Clark, associate chief counsel.

Acting Chairman MEAD. The committee will please come to order. Mr. Bunker, it is customary to swear the witnesses. Do you solemnly swear to tell the truth, the whole truth, and nothing but the truth, so help you God?

Mr. BUNKER. I do.

TESTIMONY OF ARTHUR H. BUNKER, CHIEF, ALUMINUM AND MAGNESIUM SECTION, PRODUCTION MATERIALS DIVISION, OFFICE OF PRODUCTION MANAGEMENT, WASHINGTON, D. C.

Acting Chairman MEAD. Will you give your full name and the title of your position for the benefit of the reporter?

Mr. BUNKER. Arthur H. Bunker. I am Chief of the Aluminum and Magnesium Section, Production Materials Division, of the Office of Production Management.

BUSINESS AFFILIATIONS OF DOLLAR-A-YEAR MEN IN THE OFFICE OF PRODUCTION MANAGEMENT

Mr. FULTON. Mr. Bunker, when did you become Chief of that Division?

Mr. BUNKER. I think about, unofficially, the latter part of June, and officially about the middle of August. I came down originally on a substitute position for Mr. Alex Henderson, who is deputy of the Materials Production Division, on the 4th of June, and around the middle to the end of June there was a complete reorganization of that department, the Materials Production Division; and Mr. Fuller, who was Chief, left, and I moved into the Aluminum and Magnesium Section, as Chief of the combined section.

Mr. FULTON. So that you have become chief of that section subsequent to the last hearings which this committee held on the subject of aluminum.¹

Mr. BUNKER. No; do you mean the last hearings in Seattle?²

Mr. FULTON. No; the hearings we held in the middle of June, in Washington.

Mr. BUNKER. I should say "yes."

Mr. FULTON. And before that time, with what business were you associated?

Mr. BUNKER. The last association I had in business was as executive vice president of the Lehman Corporation.

Mr. FULTON. And what is their business?

Mr. BUNKER. The Lehman Corporation is an investment trust; it is a publicly owned corporation that invests and reinvests in securities and has in the past developed a number of new enterprises, doing engineering and development work. But it does not engage in the banking business as such in any way.

Mr. FULTON. Is it associated in any way with Lehman Bros.?

Mr. BUNKER. It is only associated with Lehman Bros. in that they are stockholders of the Lehman Corporation.

My recollection is that the last stock list I saw, Lehman Bros. owned about 2 percent, or two and a half percent, of the stock of the corporation. In addition, Lehman Bros. also has a management contract with the Lehman Corporation.

Mr. FULTON. The reason I asked was that I understood from the Aluminum Co. officials that the Lehman Bros. were bankers, at least in some transactions for the Aluminum Co., and I wanted to make sure you had no connection with that yourself.

Mr. BUNKER. I can only speak from recollection; and that is, I don't think that Lehman Bros. ever have been bankers for the Aluminum Co. I can add that I have never had any connection with Lehman Bros., or received any compensation whatever from Lehman Bros.

Mr. FULTON. At least, you, personally, never have had anything to do with Alcoa in any business transaction?

Mr. BUNKER. Never.

Senator WALLGREN. How about your corporation? How about the people you were working for? Do they hold stock in Aluminum Co. of America?

Mr. BUNKER. The Lehman Corporation has been a stockholder of the Aluminum Corporation of America.

Senator WALLGREN. You say they have been?

Mr. BUNKER. I don't know whether they are or not today, frankly. I haven't looked at their portfolio since I left there on the 4th of June.

Senator WALLGREN. You are one of these dollar-a-year men; is that right?

Mr. BUNKER. That is right.

Senator WALLGREN. What is your salary going to be for this year?

Mr. BUNKER. My salary?

¹ Previous hearings on aluminum appear in Hearings, Part 3.

² Supra, pp. 2079-2159.

Senator WALLGREN. Yes.

Mr. BUNKER. With the Government?

Senator WALLGREN. With anyone. What will your income-tax return show next year as compensation?

Mr. BUNKER. I don't know what my income-tax returns will show next year.

Senator WALLGREN. Are you going to live on a dollar a year?

Mr. BUNKER. No; I have revenue.

Senator WALLGREN. I think we ought to clear up some of this dollar-a-year business. We hear so much about it. We ought to find out just exactly what the salary is of these men and who is paying the salary of the men who are supposed to be dollar-a-year men, Mr. Chairman.

Acting Chairman MEAD. Bring them under civil service and put them under the salary schedule?

Mr. COTTON.¹ We supplied the committee one time full information along that line.²

Mr. FULTON. We have information as to the past affiliation of dollar-a-year men.² The committee has not requested specifically from O. P. M., and O. P. M. has not supplied the committee, a list of the income and the sources of income of the dollar-a-year men. That has not yet been requested.

Senator WALLGREN. I am going to request it now. I would like to know what the source of your income will be for this year.

Mr. BUNKER. You mean not my private income from my securities?

Senator WALLGREN. No.

Mr. BUNKER. I have been loaned by the Lehman Corporation to the Government. That is what you are interested in, and you want to know my salary with the Lehman Corporation?

Senator WALLGREN. Yes.

Mr. BUNKER. Sixty thousand dollars a year.

Senator BALL. Does that go on while you are working—

Mr. BUNKER (interposing). That continues.

Mr. FULTON. Do you know, Mr. Cotton, whether or not that is a more or less normal arrangement by dollar-a-year men, that their salaries are paid by the organizations from which they came to the Government?

Mr. COTTON. I think it depends on the individual case. Some people retain their salaries, if their former connection is willing to continue them. Some of them do not.

Senator HATCH. May I ask who the gentleman is, who is speaking now?

Mr. FULTON. Mr. Cotton, would you give your title at O. P. M.?

Mr. COTTON. Joseph P. Cotton, Jr., general counsel's office.

Senator WALLGREN. Do you have any stock in the Aluminum Co. of America personally?

Mr. BUNKER. I have no stock in it, never have had.

Senator WALLGREN. Do you sit on the board of any other corporations?

Mr. BUNKER. Yes; I sit on the board of some other corporations.

¹ Joseph P. Cotton, Jr., office of the general counsel, O. P. M.

² Appears in Hearings, Part 3, appendix, p. 976 et seq.

Senator WALLGREN. Do any of the members of any of those other boards hold stock in the Aluminum Co. of America?

Mr. BUNKER. I don't know whether the members of any of the other boards on which I am represented own stock personally in the Aluminum Corporation in the individual rights. None of the other companies have any connection or association with the Aluminum Corporation.

Senator WALLGREN. That is all for the present, Mr. Chairman.

DELAY IN NEW PLANT CONSTRUCTION FOR ALUMINUM EXPANSION PRODUCTION PROGRAM

Mr. FULTON. Mr. Bunker, on May 12 Mr. Batt, in testifying before this committee, said that until the last few weeks prior thereto, the O. P. M. had been satisfied with the program of 845,000,000 pounds of aluminum,¹ including all that might be obtained from Canada, and including any then contemplated increase in production. Are you familiar with that figure as having been testified to by him?

Mr. BUNKER. Well, I am somewhat familiar with it, not completely.

Mr. FULTON. And I think he told us then, using several different figures, that they were planning for an expansion which they had decided upon at about that time, around the middle of May—those were the first hearings that were held—for a contemplated expansion of approximately 600,000,000 pounds to bring it up to around 1,500,000,000 pounds total.²

Is that a figure that you are still aiming at?

Mr. BUNKER. No; the figure that we are aiming at is 1,440,000,000 pounds of domestic production, plus purchases from Canada which should yield in the peak year 300,000,000 more, or 1,740,000 pounds of aluminum ingot.

Senator BALL. You mean 1,740,000,000?

Mr. BUNKER. Yes; a billion. Pardon me.

Mr. FULTON. That is now contemplated increase of American production of at least 600,000,000 pounds, as one we have known about as having been expected for more than 4 months.

Mr. BUNKER. Yes; 600,000,000 is correct.

Mr. FULTON. And that was the figure that was determined upon as something to try to get some 4 months ago, May 12, as distinct from September 15, today.

Mr. BUNKER. The first record which I find of it officially is a memorandum of May 20, and then a letter on May 24 from Mr. Knudsen to Mr. Patterson, generally describing a 600,000,000 expansion production program, and also purchases from Canada to the extent of 200,000,000 additional thereto.

Mr. FULTON. So that at the time that Mr. Batt testified, it hadn't even at that stage reached the memorandum point suggesting the increase.

Mr. BUNKER. I don't know whether it had or not. The records which I have show these extension memoranda of May 20 and the forwarding of those memoranda to the War Department on May 24.

¹ See Hearings, Part III, pp. 714-717, at p. 715.

² Idem, and p. 727.

Mr. FULTON. Four months after that testimony of Mr. Batt, is there now a single aluminum plant that is actually under construction?

Mr. BUNKER. There is no aluminum plant in the 600,000,000-pound expansion program under construction.

Mr. FULTON. So there hasn't been so much as a spade of dirt lifted on any of it.

Mr. BUNKER. So far as I know, the construction has not started.

Mr. FULTON. Is that also true of the alumina plants that would be necessary to produce the intermediate alumina material?

Mr. BUNKER. That is correct.

Mr. FULTON. Is it true of the bauxite-mining operations?

Mr. BUNKER. Well, the bauxite-mining operations have been increasing, but not with respect to the expansion program particularly.

Mr. FULTON. Are you familiar with the quantity of aluminum that was collected in this campaign that Mayor LaGuardia and others conducted throughout the Nation to get the housewives to sacrifice pots and pans?

Mr. BUNKER. I am not very familiar with it, because it was run by the Substitution and Conservation Section of O. P. M., and not by the Aluminum Section, but I heard that something around six and a half million pounds had so far been collected.

Mr. FULTON. I thought Mr. Cotton's figure was eleven and a half million. Was it only six and a half?

Mr. COTTON. I don't really remember, Mr. Fulton. Didn't I give it to you?

Mr. FULTON. You gave me the figure of eleven and a half.

Mr. BUNKER. He may be very much more correct than I.

Mr. FULTON. And that figure was supposed to include not only the aluminum but all the metal that was deposited by the housewife, some of which was alloy and some of which was not even 1 percent aluminum, due to their mistake?

Mr. BUNKER. I should doubt if some of it was 1 percent, but anyway, I am sure it includes gross weight of material received.

Mr. FULTON. In other words, that is something less than a week's production of this proposed 600,000,000 expansion of plants.

Mr. BUNKER. Eleven million would be just about a week's production.

Mr. FULTON. And every week that we delay costs us more money, more aluminum, at any rate, than the entire results of that tremendous campaign.

Mr. BUNKER. Every week of delay keeps you from getting your 600,000,000 annual production; that is correct.

Mr. FULTON. And there was a week's delay, according to your information, between May 12, when Mr. Batt told us they wanted to get 600,000,000, and the writing of so much as a single memorandum to that effect in the files of the O. P. M.?

Mr. BUNKER. I can't check the May 12 date. That is your date. My date happens to start with the memorandum of May 20.

Mr. FULTON. The May 12 date is the official stenographer's date of the hearing, and it seems to be a rather unnecessary week's delay, doesn't it, for that purpose, for just the writing of a memorandum?

Mr. BUNKER. Well, I think that getting under way to build several hundred million dollars' worth of plants is an extremely large under-

taking. From the time one first conceives of it, it is a reasonably difficult task to get work under way and under construction. I would say that a week to translate a program, which I believe from the previous testimony was 600,000,000 pounds, and which on May 20 was increased to 800,000,000 pounds in total, shows further consideration of the problem.

Mr. FULTON. Did you mean to imply on May 20 there was a program?

Mr. BUNKER. I meant to imply that on May 20 there was a memorandum recommending an increase in production facilities of 600,000,000 pounds and a purchase from Canada of 200,000,000 pounds more per year.

Mr. FULTON. It wasn't a program in any sense of the word, then, was it?

Mr. BUNKER. There was no plan at that time as to who should do it, or how or when. It was simply a memorandum with the conclusion that had been reached a week before at the hearing before this committee.

Mr. BUNKER. My reading of those minutes of your last hearing only showed 600,000,000 pounds, I believe. It looked to me as if this was a reconsideration of total requirements, coming to a conclusion that 800,000,000 rather than 600,000,000 would be needed.

Mr. FULTON. Well, that is a matter of reading. I understood then, and I understand now, that there is still a 600,000,000-pound program in this country and that the addition related to purchased outside of this country.

Mr. BUNKER. That is correct, but that is just as real aluminum whether it is made within the country or without the country.

Mr. FULTON. And as I understand, at that time the full Canadian program had been included in the 845,000,000 and was not to become very effective until the early part of 1942.

Mr. BUNKER. Yes; I am sure that the Canadian program had not been included because the question of recommending a second contract with Canada did not come up until the end of July or the early part of August.

Mr. FULTON. But that is this contract, this series of contracts, under which we have advanced \$50,000,000 to the Aluminum Co. of Canada in cash to build more plants for production, most of which will take place in '43 and '44, isn't that correct?

Mr. BUNKER. Yes; well it was an advance payment contract, each contract advancing \$25,000,000.

Mr. FULTON. Or a total of \$50,000,000.

Mr. BUNKER. A total of \$50,000,000.

Mr. FULTON. And most of that production is in 1943 and 1944, is it not?

Mr. BUNKER. Yes. There is about 178,000,000 pounds of that production in 1942; in other words, it is quite substantial in 1942.

Senator WALLGREN. What are they going to use for raw material in Canada?

Mr. BUNKER. In Canada they are going to use British Guiana bauxite.

Mr. FULTON. Providing, as the contract provides, that the shipping is available.

Mr. BUNKER. Yes. The contracts are not fulfillable unless they are supplied with ocean shipping or unless they can supply themselves with ocean shipping.

Senator WALLGREN. When we concluded our hearings along in May, it is my understanding that the O. P. M. recognized the need for constructing fabricating plants on the west coast. What has been done in that regard?

Mr. BUNKER. The O. P. M. has so far recommended that three extrusion presses be installed in conjunction with the plant proposed for the Bohn Aluminum Brass Corporation in Los Angeles.

Senator WALLGREN. What are they going to use for power down there?

Mr. BUNKER. They are going to use, I believe, Los Angeles city power, which, my understanding is, comes from the Boulder Dam power.

Senator WALLGREN. How does it compare in rates with power from Bonneville and Coulee? Do you know?

Mr. BUNKER. No; I don't know. I think it is higher.

Senator WALLGREN. What became of the three plants that were supposed to go into Washington, one on the Cascade Locks, one at Spokane, and one at Tacoma, where there is plenty of available power, cheaper power, cheaper than you can obtain today?

Mr. BUNKER. I would be glad to answer that or give the consecutive story from the dates I refer to. I think it might be much more helpful to this committee. I think it is a more orderly approach.

In brief, if we go back to the May 20 memorandum, there was a recommendation that the requirement in the ultimate peak programs of which O. P. M. had been advised which reached peak in aircraft requirements in December 1942, for airplanes to be produced in June of 1943, would be 800,000,000 pounds more than the private plant capacity, and the private plant capacity as then estimated was then about 840,000,000 pounds.

At the present time, for example, the capacity is about 660,000,000, and we expect during the latter part of this year and the first part of next year to increase, as the increased production will come into operation, to the extent of 182,000,000 more pounds of ingot. That is apart from Government plants.

Mr. FULTON. No part of which has any relation to this 600,000,000 or 800,000,000 expansion.

Mr. BUNKER. It is not part of the Government plants.

Mr. FULTON. And that is part of the program previously contemplated?

Mr. BUNKER. That is correct, but it is very real aluminum and it is going to assist, of course, in the entire defense program.

Mr. Knudsen sent to Mr. Patterson, the Under Secretary, the May 20 memorandum. On June 3, Mr. Patterson replied to Mr. Knudsen, attaching a letter of May 29 to Mr. Holden, stating that the mode of procedure in the future would be changed between O. P. M. and the War Department and that O. P. M. would be called on to supply a lot of data heretofore never required, data which was, as a matter of fact, in many other undertakings supplied on examination and engineering study by Wright Field. It provided the general cost estimates, data concerning labor requirements, general

locations, and what not, be studied by the O. P. M. and estimate be given to the War Department in order to estimate this program. My understanding—and I wasn't there at that time—was that this would help move the proposition along faster than to send out the whole engineering data to Wright Field, which was already overloaded, and none of that work had, of course, at that time been done. Again, this all antedates my particular association, and I found these things out later.

I told you, in short, that I came down as a general deputy, not in any sense as an aluminum-magnesium man on the 4th of June, and somewhat unofficially, I was asked to devote all of my time from the middle or the latter part of June to aluminum and magnesium. The very first thing that it seemed to me was essential was to find out whether power was available and where it was available. The first interview I had on the power matter was with the T. V. A. They advised me on June 14 that the whole southeastern district was extremely short of power, and my recollection is that the deficiencies for plants then building, various defense plants—of course, a great many of them aluminum plants—were 260,000 kilowatts a year in firm power. That certainly presented a very grave question.

Senator HATCH. Is that a temporary deficiency?

Mr. BUNKER. That was a deficiency, Senator, based on firm power. My understanding of the difference between firm power and general power at high floodwaters is about 600,000 kilowatts. I also understand for a period of about 18 months there was nothing but firm power available in the southeastern district; when it got to low-water conditions it might stay so for long periods, that is 1 year to 2 years, and there wasn't any excess or secondary power anywhere, and in order to fill up this deficiency a general curtailment program had to be undertaken. That was a warning, certainly, not to impose another heavy load in that whole district. We were somewhat handicapped at that moment in studying power because Mr. Kellogg was just in the process of resigning. Mr. Batt and I then talked to Mr. Lilienthal and asked him whether he could help us out and lend us his manager of power, Mr. Krug. We had to have an active man who was familiar with all of the other power authority of the Government. Along toward the latter part of June Mr. Krug came in.

Mr. FULTON. I think Mr. Kellogg was the man who said there was no shortage of power.

Mr. BUNKER. I have heard a great many things he said, but to my personal knowledge I only worked with Mr. Kellogg for 3 days before he left. So O. P. M., if you wish, found itself without any power department to refer these very important matters to.

Having been advised of the shortage and existing deficiencies in firm power in the T. V. A. district, I then examined Abe Fortas and all of the engineers of the Grand Coulee and Bonneville district, on what the situation was in the Northwest, how much power we could have, and where we could have it. Mr. Fortas wrote, as a consequence of all of these talks, to Mr. Batt on June 19,¹ and he said, giving a great many schedules of variable locations of power, that you could have some

¹ See Exhibit No. 118, appendix, p. 2283.

power at Cascade Locks, at Spokane, and at Tacoma, in various size blocks.

We immediately discussed the possible locations with the War Department, and they asked us to eliminate Tacoma. They said that the War Department did not, for strategic reasons, wish to place any more burden on the city of Tacoma.

Senator WALLGREN. Who was going to run that plant at Tacoma?

Mr. BUNKER. At that stage we were simply searching for power and we hadn't approached the problem of who was going to run any plant at that particular date. I mean in that part of June we were on a power hunt.

Senator WALLGREN. There had been applications by others than Alcoa to operate a plant there, hadn't there?

Mr. BUNKER. Well, I am not entirely sure, but I think that the Olim group had asked to run a plant in Spokane. Whether they had asked to run one in Tacoma I don't know.

Mr. FULTON. Mr. Ickes testified before this committee on June 16—that is 3 days earlier than that—to the effect that there was power which right then could be made available. I think he referred to 60,000 kilowatts at Boulder Dam available in June of this year.¹ Did you find that to be the case when you made your power examination?

Mr. BUNKER. No, sir; I did not find that to be the case.

Mr. FULTON. When did that become available, or when would it become available?

Mr. BUNKER. The earliest power which we could find out of the Grand Coulee-Bonneville district—

Mr. FULTON (interposing). No; I was talking about Boulder Dam as being then available in June.

Mr. BUNKER. Boulder Dam may then have been available, I don't know.

Mr. FULTON. Sixty thousand kilowatts, and he said there would be another 60,000 kilowatts available in December or January, and as to Grand Coulee and Bonneville, I think he said that generators of 108,000-kilowatt capacity were then being installed, which he expected to be ready in August, September, and March.² Are those figures figures that were later given to you?

Mr. BUNKER. My recollection is that there was no available Boulder power for aluminum at that time. If you are speaking of June 16, I think all of the available power for aluminum or magnesium was to be assigned to magnesium.

We found that this was usual procedure. We would discuss the power question, we would come out with a power schedule order such as this letter, undated, but received on June 19 from Mr. Fortas, and then later on, after we thought we had exhausted our conversations on power, we would find some more power available. We have two instances of that. One is that when we got through with this power schedule—which I would like very much to read you because it is the only instrument on which we had to go, it is the only offering on which we have to go on that date for the Northwest—and laid our plans on the basis of this, we were then offered more power from the Grand Coulee-Bonneville district.

¹ Hearings, Part 3, p. 884.

² Ibid.

Mr. FULTON. At Tacoma?

Mr. BUNKER. That is correct.

Mr. FULTON. And that was after you concluded you couldn't build an aluminum plant at Tacoma because of lack of power?

Mr. BUNKER. No, sir; I have said we had not concluded that. The War Department asked us not to put a plant in there. We have three possible locations, and only three, unless we wished to wait until September, and later, really to January 1943. The only choices which we were talking about were Cascade Locks, Tacoma, and Spokane for April 1942. The War Department said, "Please leave Tacoma alone." Therefore, that left only two choices, and that was Cascade Locks for 60,000 kilowatts—that is all available.

Senator WALLGREN. Was that an oral request on the part of the War Department, or a written request, to O. P. M.?

Mr. BUNKER. It was an oral discussion, and very serious consideration was given it. We would discuss it with them at length, and say, "Can we freely go ahead and consider all these sites?" And after due consideration they would advise us whether we could or not.

We were left, then, as far as the Northwest was concerned, on June 19 with only two choices, and they were Cascade Locks and Spokane.

We originally had believed it might be more advantageous to put some Government plants both at the Longview and Vancouver, and we so requested the power authorities, to see whether they could move power on those dates there. We were advised that in the spring dates of April 1942 we could have no power whatever at those locations.

Mr. FULTON. You were requesting that the power be available in April of 1942. Is that it?

Mr. BUNKER. April 1942 is their date, but we said spring and summer dates.

Mr. FULTON. Did you contemplate that you would have these plants built and in operation, needing power by April of 1942?

Mr. BUNKER. I contemplated that we could use some power, certainly in the spring of 1942, and that we might be in a reasonable state of operation by midsummer of 1942.

Mr. FULTON. I understand now you don't expect to be in operation with these plants until October of next year.

Mr. BUNKER. You may be very favorably surprised. I mean, you may be surprised and see some of these plants.

Mr. FULTON. I asked you the dates that you contemplated, and I think you told me it would take a year.

Mr. BUNKER. Of course, Mr. Fulton, it is one thing to say to a man exactly when you expect a plant to get into operation with all of the vicissitudes, the difficulties of obtaining materials, not knowing whether you are going to have strikes or no strikes—all of those questions, and looking ahead into the future it is a much more comfortable position to say "Let's call it a year," and maybe you can do it in 9 months. You have seen evidences of plants going up in 9 months—some of the recent Reynolds plants, some of the recent aluminum plants and construction—and if we repeat some of those experiences we will, of course, have them going by next June and July.

Mr. FULTON. But your present expectancy is at least 3 months later than it was in June. Is that right?

Mr. BUNKER. Frankly, I have no exact present expectancy. I don't see how it is possible to have one. If conditions are favorable, you will do it in much less time. If you meet with difficulties, it will take you the full year.

Mr. FULTON. Mr. Bunker, I note that Longview, which I believe is where the Reynolds plant was to be located in the State of Washington, was it not, was ruled out because power would not be available in the spring of 1942, yet now we don't contemplate any of these plants will be ready, even on this new 9-month estimate of yours, until June or July, or later, of next year.

Mr. BUNKER. Well, the letter here from the power authority says that no power can be available at Longview or Vancouver until September '42.¹ No matter how you look at the problem, it seems to me too long to wait for power if you have no promise of it in September.

Senator WALLGREN. Did you get that from the Power Commission?

Mr. BUNKER. I have the letter here.

Senator WALLGREN. What about the Bonneville Authority? What do they have to say to you?

Mr. BUNKER. I understand this is the Bonneville Authority. This is from the Department of Interior, Office of Division of Power, Washington.

Senator WALLGREN. Let's go back to these plants for just a minute. If this plant is located at Cascade Locks and one at Spokane, who is going to operate those plants? Does this contract you have here mean that the Aluminum Co. of America is going to operate those plants?

Mr. COTTON. Ask him to let you tell the story.

Senator WALLGREN. No; I would like to ask these questions.

Mr. BUNKER. In the first place, Senator, there is no recommendation for a plant at Cascade Locks.

Senator WALLGREN. There was at one time.

Mr. BUNKER. There was at one time, for 3 days.

Senator WALLGREN. It is out?

Mr. BUNKER. Yes, sir.

Senator WALLGREN. How about Spokane?

Mr. BUNKER. That is a plant to be operated by Union Carbide and Carbon Corporation.

Senator WALLGREN. They will be the only outfit outside of the Aluminum Co. of America and Reynolds manufacturing aluminum. Is that so?

Mr. BUNKER. No, sir. There will be the Bohn Aluminum and Brass Corporation, the Olin Corporation, the Reynolds Corporation, the Union Carbide Corporation, and the Aluminum Co.—five operating companies.

Senator WALLGREN. What about this contract you have here? What does that cover?

Mr. BUNKER. What contract is that that you have there, Mr. Fulton?

Mr. FULTON. The contract of August 19 between Alcoa and the Defense Plant Corporation,² which, Senator Wallgren, as I under-

¹ See Exhibit No. 118, appendix, p. 2283.

² Subsequently entered as Exhibit No. 119, see appendix, p. 2284.

stand it, did not specify the area; it only says in the States of Washington or Oregon, from one plant, for 90,000,000 pounds, by the Aluminum Co., on deep water or adjacent to deep water, without stating where.

PROCESSING OF ALUMINUM FROM ALUNITE

Senator WALLGREN. What I want to get around to is this. I want to know what kind of process is going to be used in the manufacture of aluminum, whether you are going to resort to bauxite, whether you are going to pay any attention to the Kalunite process, whether there is any possibility of using alunite, and whether you know that the Japanese Government has been manufacturing aluminum for years out of alunite.

Mr. BUNKER. There are a great many questions.

Senator WALLGREN. I know it, but I hope you can follow it.

Mr. BUNKER. I would be glad to tell that story to you. We have, of course, given it a good deal of consideration.

Senator WALLGREN. I think we can bring it out in this way. There is only one process that is in use. Is that right?

Mr. BUNKER. There is only one process today.

Senator WALLGREN. That is the use of bauxite as a raw material?

Mr. BUNKER. The process known as the Bayer process.

Senator WALLGREN. Japan is using alunite, and using what might be termed a Kalunite process. Is that right?

Mr. BUNKER. Well, I saw that Mr. Eichelberger so testified,¹ but he also sent a telegram wishing to correct his testimony this morning with respect to some statements he made concerning Japan. I have a copy of that telegram with me.

Senator WALLGREN. I would like to see it. Did he make any wild statements?

Mr. BUNKER. Yes, sir; I think he made some very, very wild statements in his testimony. I think they were quite extraordinary.

Mr. FULTON. With respect to the Japanase process, did he change that testimony?

Mr. BUNKER. He says that he must have misunderstood, I believe, Senator Mead's question concerning Japan. Mr. Eichelberger was discussing 180,000 tons production in Japan. All of the information in our office is that the production of aluminum in Japan and her occupied countries is 55,000 tons maximum, not 180,000 tons.

Senator WALLGREN. He testified they made more aluminum in Japan with this process in 1939 than we manufactured in the United States.

Mr. BUNKER. I think his testimony is wholly incorrect.

Would you like me to take up the whole question of Eichelberger's testimony? I think it is very important. I think this committee has been misled on many problems and I think we ought to straighten out that record. If you would like me to take it up I would be delighted to.

Senator WALLGREN. I, for one, have been led to believe that the O. P. M. is unwilling even to study any other process other than the

¹ See supra, pp. 2143-2146.

one that is now in use by the Aluminum Co. of America to manufacture aluminum by the use of bauxite as a raw material.

Mr. BUNKER. Well, sir, in that case you have been badly misinformed.

Senator WALLGREN. What experiment have you made, what have you done to lead up to the use of alunite?

Mr. BUNKER. Oh, a great deal.

Senator WALLGREN. Everyone claims that the entire west coast and western hills are full of it, and along with it, all of the power you want.

Mr. BUNKER. Senator, if you would like me to discuss the two things, I shall be very glad to. One is the whole Kalunite situation, the alunite situation, the Eichelberger testimony, which I think was very misleading to this committee, and to straighten out the record here, because I think it is important. The only way I know to really convey to you the true situation with respect to alunite, with respect to the Kalunite Co. and its operations and what we have done in terms of studying and working on these processes, is to tell you the full story.

Senator WALLGREN. Why can't we have Mr. Eichelberger back here at the same time we have Mr. Bunker and thresh this thing out?

Mr. FULTON. We can bring Mr. Eichelberger here.

Mr. BUNKER. Mr. Chairman, I can say Mr. Eichelberger's associates were in my office and read his testimony, and after reading it they said, "Gentlemen, even magic can't cure this testimony."

Senator HATCH. Let's hear Mr. Bunker.

Acting Chairman MEAD. Have you any further question, Senator?

Senator WALLGREN. I will forget them.

Acting Chairman MEAD. Proceeding, Mr. Bunker, we will hear your story.

Mr. BUNKER. First, as to the Eichelberger testimony, it is important to know what the Kalunite Co. has done is to manufacture some alumina from alunite and to send that alunite to the Batelle Laboratories, and also to send some of it to the Neuhausen Allgemeine-gesellschaft in Switzerland, and each of those institutes had between five and six thousand pounds of alumina, and they reduced it to aluminum. It is not, as Mr. Eichelberger says, correct that we made aluminum by the carload. As a matter of fact, nothing of the sort happened. He is referring purely to aluminum. You couldn't say it was a slip and it was alumina, because the entire paragraph is devoted to the manufacture by Batelle and to the manufacture by Neuhausen. If they used all of the alumina they might have made a ton or two of aluminum but there is no evidence they turned all of that into aluminum. What they did make, according to analysis, was made from alumina which both Kalunite and Neuhausen agree contained 1.19 of potash and the other analysis 1.20 of potash, a potash content which presents some very real problems.

Now, Mr. Eichelberger says all the way throughout that "we didn't ask for a dime," (I am quoting) "we didn't ask for anything except for the privilege of being allowed to do this and to get a certificate of title," I presume he meant a certificate of necessity, "and we were politely asked out." That is the end of the quotation.

The only thing I know about it is that on the 16th of June we got a copy of a letter which Mr. Eichelberger had sent to the Secretary of the Interior. That letter was dated March 7, and he sent it to us on the 16th of June. In it he asked, not for a dime, but for sixteen and a quarter million dollars of the Government's money. Six hundred and fifty thousand dollars of that, as far as I can see, was to pay them back for previous work done on processes, in addition to which he wanted for all time \$5 a ton, in addition to which he wanted a management fee contract, and he says, extraordinarily, and I quote, "It is not possible * * * to make any definite claims as to final costs."

That was the situation as I found it on the 16th of June. I have asked Mr. Eichelberger and his associates again and again if they would not like to go forward and build an aluminum plant on their own, that they and their associates have a great deal of money, and instead of not asking for a dime I have been advised repeatedly that they would not invest a dime, and I am sure that is the actual fact. But to stick to Mr. Eichelberger's testimony in answer to the question as to how many ore reserves there are in the State of Washington, I presume of alunite because certainly nobody suggested that their process adequately can treat and extract aluminum from clay—nobody avows that, the Bureau of Mines or anybody else; if one refers to the report of the Bureau of Mines by Mr. Thoenen in February of 1941 and also adheres to the assumption that you have to have 20 percent recoverable alumina from alunite in order to have an operable process, the Bureau of Mines only gives 372,000 tons of alumina that would recover to the extent of 18½ percent, and not meet even their requirement of 20 percent, in the entire State of Washington. That was in February of this year.

Senator WALLGREN. Let's not just talk about the State of Washington; let's talk about that entire western slope, all the way from the Mexican border to the Canadian border. Utah has plenty of alunite, possibly more than any other State. Mr. Eichelberger testified there in Seattle and went on to say he wanted this committee to see his plant at Salt Lake City. We said we expected to see his plant, and Mr. Eichelberger stated, "I hope I am there with you." He said: "After we had made alumina, we then made aluminum to prove that that product, alumina, could make commercial or better aluminum." Apparently he is manufacturing, with this pilot plant at Salt Lake, aluminum with the use of alunite found in Utah.

Mr. BUNKER. Senator, he, of course, is not running his plant, but he can only make 1 ton of alumina per day, and he owns no facilities—

Senator WALLGREN (interposing). He has only a pilot plant, certainly. You couldn't expect him to make more than 1 ton with a small pilot plant.

Senator CONNALLY. One would be one more than nothing, wouldn't it?

Mr. BUNKER. Yes, Senator; it would indeed.

Senator CONNALLY. There seems to me to be a good deal of misunderstanding as to what the Bureau of Mines has said, what the National Academy of Science has said, and I would like to say a word of what they have said.

Senator WALLGREN. If even a small pilot plant is turning out aluminum, using alunite, and Japan is using alunite in the manufacture of her aluminum, is there any reason on earth why we can't use alunite to manufacture aluminum?

Mr. BUNKER. As far as I know, Senator, the facts about Japan are just picked out of the air. She may be using some alunite. I have heard that the clays she is using are bauxitic in nature and not alunitic; and in the next place, I don't presume her production is over 20 percent of that suggested by Mr. Eichelberger for her total production. We haven't got, so far as we know, or so far as the Bureau of Mines knows, any developed, determined deposits that are enormous, whether they are in the State of Washington or whether they are in the State of Utah, which are commercially and feasibly treatable by this process.

Senator WALLGREN. Why don't we look for them? At the present time they are getting our bauxite from Dutch Guiana. Isn't there a possibility that that source of supply might be shut off from us?

Mr. BUNKER. Sir, we have not only considered that possibility, but we have made all our plans so that we can take care of every possible American requirement from domestic sources if we have our backs to the wall and do not get a ton from Guiana.

Senator WALLGREN. Our testimony before the committee along in May was that there was only a possible 3 years' supply of bauxite in Arkansas, and practically all of that was cornered by Alcoa.

Mr. BUNKER. I don't think either of those premises is correct, sir. They may have referred to only high-grade bauxitic ores running over 50 percent. Certainly there is enough to provide raw material for a great many years in Arkansas, and we have planned that if the emergency so requires, we can take care of this country's needs on the fully expanded program for a great many years from Arkansas.

Even if we regard Mr. Eichelberger's proposal in which he asked for sixteen and a quarter million dollars, we are only talking there about whether immediately to jump in, in the face of a great many uncertainties, and produce 4 percent of the present requirements of this country, of aluminum. That is the maximum ever suggested by anybody—the production of 4 percent, not any more.

We have, as a matter of fact, made a proposal some time back to proceed on what we believe is a more reasonable proposal and to jump this production from the present rate so that we will have an ore feed of 167 tons a day. The reason for arriving at 167 tons a day is that that permits us to do two things: One, to use a full commercial size assembly of machinery units throughout; in other words, there won't be an experimental piece of machinery if we jump from there to, say, a six-unit plant, which was the size of the original proposal. We will learn not only very much more about how to operate this thing, but we will also learn a great deal more about the ore reserves, and the Bureau of Mines themselves, in their excellent report, have a great many things to say about those ore reserves and, incidentally, about the analysis of ore reserves by the chief engineer of the Metallurgical Division of the Bureau of Mines. Their analysis says if you wish to confine yourself to 20 percent recoverable alumina from alunite, then there isn't one single ton of material in Thoenen's report on replacement of alunite reserves in

Utah that is useful for a treatment of that sort, and they themselves are the people that say you must have at least 20 percent recovery.

In other words, this is an extraordinarily complicated matter. It is not that simple thing which everybody has walked around and said, "There are millions and millions of tons of alunite." There are millions of tons of alunite of a grade that cannot possibly be handled.

Senator WALLGREN. What have you to say when you have a metallurgical engineer with the Bonneville people, employed by the Government for a considerable time and thoroughly acquainted with our raw materials out there, who states that alumina can be manufactured from this clay? I am speaking of Mr. Raymond Miller, metallurgical engineer with the Bonneville Authority.

Mr. BUNKER. Nobody denies, so far as I know, that you can make aluminum from alunite. You could make aluminum from clays, and you could have a great many headaches in doing so. Here is Thoenen's report on the State of Washington alone which tells you his opinion, and he has assembled all the data from at least a great many of those geologists in the Government's employ and in the employ of the various States who have given years of thought and searching to alunite deposits.

Senator CONNALLY. There are other States that have alunite besides Utah and Washington, aren't there?

Mr. BUNKER. Well, sir, for practical purposes, Utah, it seems to me, based entirely upon the Bureau of Mines report, is the only State where they have any possibility of really running a production of alunite.

Senator CONNALLY. I have reports from my State from individuals that there were large alunite deposits in certain counties, and I would submit that to somebody if they were interested at all. I wouldn't know alunite if I saw it, but I understand there are large deposits, but I don't suppose anybody from the Department has investigated or is interested in it.

Mr. BUNKER. We do get letters from States in the Union saying that they have alunite and high aluminous clays. We ask them to send us samples of the material, and we send that material to the Bureau of Mines and follow it up with great care. I don't happen to be familiar with anything from your State.

Senator CONNALLY. I am not concerned with anything from my State or any other State. If it will make aluminum I want to get it.

Mr. BUNKER. The difficulty is, it is very difficult to distinguish alunite from all aluminous clays. It is said there are aluminous clays in almost every State in the Union. Those are, so far, from any practical point of view, untreatable. Of course, they will send up to us samples of material containing 7 percent, 12 percent alumina, and say they have 300,000,000 tons of it.

While I am on the clay problem—

Senator CONNALLY (interposing). Of course, the point you make is they can produce aluminum from that, but it would be a costly procedure.

Mr. BUNKER. If we had our backs to the wall, if we had exhausted all of our bauxite and alunite in this country and still had to wage

war, we certainly could make aluminum, and plenty of it, from clays. Nobody could ever count the cost.

Senator CONNALLY. It would cost a lot of money, but it wouldn't cost any more than a lot of other things the War Department and Navy are spending money for.

Mr. BUNKER. That is absolutely correct, sir.

METHODS OF DEVELOPING BAUXITE RESERVES

Senator CONNALLY. Your thesis is that there is plenty of bauxite. Is that right?

Mr. BUNKER. There is plenty of bauxite to meet the emergency.

Senator CONNALLY. Where? In Arkansas, principally?

Mr. BUNKER. Yes; principally in Arkansas.

Senator CONNALLY. Are you doing anything to develop it and get hold of it?

Mr. BUNKER. Yes.

Senator CONNALLY. I'm sorry I wasn't here earlier.

Mr. FULTON. They haven't started.

Senator CONNALLY. Counsel advises that while you have a big plant, you haven't started. Is that true?

Mr. BUNKER. Well, sir, we have laid the work out very carefully. We do not have to have any ore, of course, until these plants are ready to receive it. At the present time I would like to point out the private companies have stepped up their mining in Arkansas to approximately 900,000 tons a year. That bauxite is being stockpiled in this country today at the rate of 400,000 tons a year. We have plans almost ready to put into effect for the stripping of properties or the preparing of underground mines so that when we turn this large load on those properties, which we must turn on as soon as our new alumina plants are ready, we will be ready to jump that production from about 900,000 tons a year to over 2,500,000 tons.

Senator CONNALLY. All in private plants?

Mr. BUNKER. To feed the Government plants that are being built, sir. All of the raw material is owned privately by a number of owners in Arkansas.

Senator CONNALLY. We can take it away from them if we want to, can't we?

Mr. BUNKER. Yes, sir; I presume we can.

Senator CONNALLY. You presume. Don't you know it? Don't you know under the Draft Act we can take anything we want?

Mr. BUNKER. Surely, I know that.

Senator CONNALLY. Don't say perhaps, then, because it indicates a reluctance on your part to admit what everybody else knows.

Mr. BUNKER. Well, sir, I can assure you there was no reluctance on my part toward seeing this Government do anything it may need to do to obtain the materials.

Senator CONNALLY. I want to see it done privately if possible, but if they won't produce it, I am in favor of taking it away from them and letting the Government produce the bauxite.

Mr. BUNKER. First discussing the mines, which are entirely different, we want this bauxite to put into Government plants. The mines are owned by a number of private companies. Outside of the

Aluminum Co., the rest of the field is owned by people not interested in manufacturing aluminum metal today, but interested in abrasives, in chemicals, or just simply in owning bauxite properties.

I have no reason to expect, so far—and I hope it may continue to be true—that the Government will have any more difficulties in buying bauxite than it has in buying lead, copper, zinc, chrome, manganese, or any of the raw materials which the Government does not now own.

Mr. FULTON. Mr. Bunker, how much capital will it take to increase these mining operations, and who is going to provide that capital?

Mr. BUNKER. A number of the companies, the larger companies, say that they are perfectly agreeable to providing their own capital.

Mr. FULTON. Including the Aluminum Co.?

Mr. BUNKER. The American Cyanide, the Reynolds Co., and so on.

Mr. FULTON. The Aluminum Co.?

Mr. BUNKER. The Aluminum Co. is, of course, entirely willing to provide capital for their new mining equipment.

Mr. FULTON. You are talking of bauxite mines. Have you made plans for the determination now as to whether the Government will lease these mines and operate them themselves, or whether it will simply buy the bauxite from private companies which have now agreed to produce it?

Mr. BUNKER. I think that the Government would be much better off if it could make a fair price and not have to undertake mining those, any more than it would mining copper mines or anything else. The problem, as I see it, is this: You have a number of owners; a lot of them are small owners; some of them are people who can't afford today to go out and strip their properties. Now, out there in Arkansas, about one-third of the values are in underground mines and two-thirds are in so-called strip mines where they strip off anywhere up to 50 or 60 feet of overburden and then lay bare the valuable bauxite and mine it from that point. If a small owner has 500,000 tons of bauxite according to the drill holes, it may well cost him 50 cents a ton, or \$250,000, to strip that overburden off and put it aside and prepare his mine for operation.

We have talked to the big people, and they are perfectly willing to go ahead and do that and to strip every pound of overburden off their property, whether they ever sell it or not. You can well conceive that a small man may say, "You have got to help me out, and the Government has got to come in here. I am willing to part with my bauxite at anything you want on a royalty ton basis, but I can't afford to put up my own money to strip this property. You may never buy it. The emergency may be over. There may be no demand for it."

We haven't finished talking to all the owners in the field to see how they are fixed. We have talked, first, to the big ones to see if they will take every possible step to prepare their mines for the big burden, and they are more than 100 percent cooperative.

Mr. FULTON. My question, though, related not so much to why they did it but as to whether the O. P. M. has during these last 4 months determined on the policy. Does the O. P. M. intend to buy the bauxite from the mine operators, or does it intend to lease the mines and operate the mines?

Mr. BUNKER. We have made a recommendation that some agency of the R. F. C., such as the Metals Reserve, be the buying agent for the raw material and run a sampling plant. We have never made a recommendation, and are not ready to make one, and I hope we may never have to make one, that the Government has to go in and operate those mines. It may have to extend some assistance. I think that 80 or 90 percent of all of the ore reserves will be owned by people who will be perfectly willing to invest their own money to strip those mines, to prepare them, and sell the Government at a fair price, and you may have to help some of the small people who simply can't afford to do it and do not own the equipment.

There are several ways of helping those small people. That is, you can either decide that the Government should go in—a matter which so far as I know it hardly ever has done in mining and extracting raw materials—or you can persuade some of the larger companies who have the stripping equipment to go in there and operate on a small lease basis with these owners.

Mr. FULTON. I wasn't talking of a particular method, but I just wanted to know whether the O. P. M. had decided on a method. I take it you have, namely, private operation, and I understood that there were 80 or 90 percent of the bauxite deposits in the possession of companies that you listed, not exceeding 10 or 12 large companies. My next question is, Have you made a contract, or has the Government made a contract with any one of those 10 or 12 companies to start work on the bauxite?

Mr. BUNKER. No; the Government hasn't made a contract to do that or to buy any additional alumina in the future. I would be loath right now to say that the Government should go out and place contracts in the future and establish prices for bauxite.

Mr. FULTON. If a man is going to strip 50 feet of top earth off his bauxite area he has to acquire some machinery to do it, and he has to make some arrangements. It may take him some months. He has to know what his prices are going to be, and what he is going to get. My question is, simply, Has O. P. M. got to first base from the point of view of starting on bauxite?

Mr. BUNKER. You are entirely wrong, Mr. Fulton, if I may say so. We have definitely gotten to first base, and the big owners have agreed without any arrangement whatever with the United States Government to go ahead and not only buy the machinery but to go to the expense of stripping and preparing their mines in full. You may have to help out the small man. You may have to step in and help him, because you want that whole field to operate.

Mr. FULTON. You say they have agreed to go ahead. You mean they have signed a contract?

Mr. BUNKER. No, sir; they have not. So far as I know, they have placed orders for their machinery, and they have verbally agreed to go forward. Our engineers are going to be constantly in the field; they have already been in the field. They are going out again in the field to help plan and arrange the stripping and probably further drilling.

Mr. FULTON. How much are we going to pay for the bauxite?

Mr. BUNKER. Well, that is a question, again, that we have not taken up. You are going to buy all kinds of grades, and you are going to have sliding scale prices.

Mr. FULTON. Have you taken up the question of studying it?

Mr. BUNKER. We have been studying the cost of producing and mining bauxite, so we know the fundamentals that enter into any fair price.

Mr. FULTON. And each of these companies have given you access to their records, and your accountants have gone over them?

Mr. BUNKER. Some of these companies don't even mine and operate. As to the records of raw material reserves, we have been given every single record of all of those companies. We have compiled our own estimates of the raw material reserves and classified them into three grades of ores and we know where they lie and what the mining problems will be, and we are directing the companies' energies in the direction we think the problem is.

Senator BALL. In other words, you are satisfied when the time comes that you need the bauxite, it will be there.

Mr. BUNKER. We are definitely going to assure ourselves that the mines are opened up. Once they are opened up, the underground mining takes place very quickly. The shipping operations are under way at this moment.

Senator BALL. In other words, you are in process of getting set for that peak load now.

Mr. BUNKER. We are in the process of getting set, and we are definitely going to see, as each month goes by, that we achieve.

Senator WALLGREN. What will the cost be of the stripping process?

Mr. BUNKER. That is variable, but I would say 75 cents to \$1 a ton.

Senator WALLGREN. Approximately, just in a round figure, what do you think it might cost the Government to find out whether or not the bauxite is there?

Mr. BUNKER. The stripping, sir, is not to find out if the bauxite is there. That whole deposit lends itself very well to drilling, and as far as high grades are concerned has been well drilled and we have the core analyses and core samples.

Senator WALLGREN. Who paid for the drilling?

Mr. BUNKER. The Government has done a limited amount of drilling.

Senator WALLGREN. You don't know what that has cost the Government?

Mr. BUNKER. The private companies have spent a great deal of money because they have done that very small sectional drilling throughout.

RECOMMENDATIONS OF O. P. M. ON PROPOSED CONSTRUCTION OF NEW ALUMINUM PLANTS IN NORTHWEST

Senator WALLGREN. What I want you to do is a little prospecting on alunite. You are prospecting on bauxite. Why not find out whether alunite can be a success?

Mr. BUNKER. I should be delighted to finish the whole story on alunite because it is quite an extensive one and we have done an enormous amount of work on it.

Senator WALLGREN. Where did you do the work?

Mr. BUNKER. We did it largely in our office, and with the Bureau of Mines and Geological Survey and National Academy of Sciences.

Senator WALLGREN. You have on the one hand a metallurgical engineer in one department of the Government saying it can be done, you have all the ingredients in these clays to do the job; and, on the other hand, you have the Bureau of Mines tell you that you can't do it, and someone willing to accept a negative answer on the proposition.

Mr. BUNKER. As a matter of fact, I did state in the record here a little while back that we made a recommendation which is completely approved by the National Academy of Sciences. We believe we are doing a very sensible thing. One of Mr. Olin's associates who was with us on Friday had spent the previous day with the chairman of the alunite committee. He said that he was completely satisfied that we were doing the exactly appropriate thing in going forward with alunite and that is to build the 167,000-ton plant unit.

Mr. FULTON. Was that Mr. Elfred?

Mr. BUNKER. Mr. Elfred; yes.

Mr. FULTON. I received a telegram from him this morning stating it is a quotation from a telegram to you asking for permission to show you why they think you should do three times the amount.

Senator WALLGREN. This was the Tacoma plant; they were going to put the plant in Tacoma; is that right?

Mr. BUNKER. That is Marysville, Utah.

Senator WALLGREN. And do I understand the Tacoma plant is out completely?

Mr. BUNKER. No, sir; it is completely in. I said that, originally, when we were offered 65,000 kilowatts in Tacoma, the War Department would not approve a plant. I just happened to be in the process of saying that we had only two choices which we could accept on a practical basis because, outside of Tacoma, the only places we could get power were Spokane and Cascade Locks. After that, Dr. Raver called me up and said there were 35,000 kilowatts more available at Tacoma. I went back to the War Department and asked them, in view of the circumstances—the circumstances being that we needed power very badly, indeed—could we not have a 30,000,000-pound plant in Tacoma, and they said, "Upon reconsideration, if it is that small a plant and not very large, you can have a 30,000,000-pound plant and we will approve it."

Senator WALLGREN. When are they going to construct that plant?

Mr. BUNKER. So far, I think the Olin Corporation will have to make its mind up whom they want to have design that plant. We came to an agreement in the middle of June that they wanted the Aluminum Co. to design and construct that plant. Since that time, about the first of August, they secured the services of a Norwegian named Sjoeli, and they now feel they would rather have him design it. So far, I have only been advised in a personal letter from Mr. Elfred to me as of last Friday that he expects to recommend to his associates that Sjoeli rather than the Aluminum Co. design and construct that plant.

Senator WALLGREN. Have any steps been taken to choose the site?

Mr. BUNKER. We took some preliminary steps to choose that site, but in the absence of any contract, we couldn't go any further; and

we took steps based upon our then existing understanding that the Aluminum Co. would design and construct the plant—that the Olin Corporation wished the Aluminum Co. to do so. We had an arrangement with the Aluminum Co., which I submitted to Olin, to do that on a no-fee basis, and also to train their men. They thought that was the most ideal arrangement and said they would accept it.

As I say, last Friday they advised me that they proposed to recommend to Olin and his associates that Mr. Sjoeli and his other engineers design and erect that plant, but that is the first step that they have taken toward changing their original plans.

Senator WALLGREN. I want to get back to the fabricating plant. The committee spent considerable time on the Pacific coast and we spent considerable time in and around the Los Angeles area, where we found that more than one-half of the planes manufactured in this country are manufactured right in that area. In talking to these plane manufacturers we asked them whether or not they thought it might not be advisable to have fabricating plants on the west coast, and they expressed the opinion that in the case of the large, bulky pieces, it would be quite a saving for them if they had such a fabricating plant on the west coast.

Now, previously we have pointed out here in this committee some weeks ago the fact that we have a sort of merry-go-round in the shipment of this aluminum around the country, where you bring bauxite up from Dutch Guiana, process it in the Mississippi Valley, ship it across to Bonneville, and there you make it into alumina—no; you make the alumina at Mobile, I guess, and ship it all the way to Bonneville, make it into aluminum, and then you ship it all the way back to Pennsylvania and fabricate it into parts, and then you ship it all the way back to Vultee, North American, Lockheed, and all these plants that you have in California; and we know that transportation is going to be a serious problem. It is right now, and we wonder what you are doing toward constructing fabricating plants to eliminate some of this transportation problem.

Mr. BUNKER. I would be very glad to tell you about the fabricating situation. In the first place, the best estimates that we can make are that there is not 50-percent consumption of aluminum on the west coast.

Senator WALLGREN. I am talking about more than 50 percent of the planes that are manufactured being manufactured out there, not the aluminum consumption.

Mr. BUNKER. I see. Our figures are that from the manufacturing point of view of defense articles only, about 28 percent of the aluminum is finally manufactured and assembled into planes on the west coast, and the balance throughout other areas of the country.

Mr. FULTON. At present?

Mr. BUNKER. In future prospect against peak demands; against all we have been advised of as to peak demands for aluminum in the Army, Navy, Air craft, and lend-lease bill.

Mr. FULTON. That would be somewhere four and five hundred million pounds annually?

Mr. BUNKER. Thirty percent as a round figure seems to be that amount which will eventually be assembled there.

Senator WALLGREN. Getting to that point now, what percentage of the total aluminum manufactured in this country is manufactured at Bonneville? Or will be at the peak?

Mr. BUNKER. There isn't any fabricating facility there at all.

Senator WALLGREN. I am talking about aluminum itself.

Mr. BUNKER. Four hundred fifteen million pounds of aluminum ingot will be produced every year in the Northwest.

Senator WALLGREN. About 25 percent of the total?

Mr. BUNKER. And 70,000,000 more down at Los Angeles, so on the west coast, including the Northwest, we will have about 475,000,000, or approximately a third of production.

Senator WALLGREN. You mentioned a while ago there was some fabrication undertaken in the Los Angeles area; is that right?

Mr. BUNKER. Yes. What we have done in the matter of fabrication is that wherever it has been possible for us to throw fabricating facilities into a percentage balance on the west coast, we have wanted to do so. For example, if 30 percent of the aluminum, really by chance—because that is where the power is available—is going to be manufactured, and 30 percent consumed there, we would like to fabricate 30 percent there.

Senator WALLGREN. Of course, fabrication gives considerable employment, far more than just the manufacture of the raw material; that is, of the aluminum. At the present time, we have found—I am sure the committee agrees with me—rather a congestion in that Los Angeles area, and we know they are putting up another Douglas plant down there, and Douglas himself doesn't know where he is going to get the men, or where he is going to house them; that is how bad the situation is. Are you going to go in there with another plant?

Mr. BUNKER. We are going to put on a very small addition at the Bohn plant of only three extrusion presses. The logic of that is that we had to go to Los Angeles to get the last amount of available power for aluminum. In that, we had no choice. We could not get that power in any other location.

Senator WALLGREN. You couldn't, with new generators being put in at Coulee?

Mr. BUNKER. No, sir.

Senator WALLGREN. Do you mean to say there is no power available in that Columbia River Valley?

Mr. BUNKER. Yes, sir. I would just like to file this letter from the Authority, because we can't go behind this.

Senator WALLGREN. Is that from the Department of the Interior?

Mr. BUNKER. Yes, sir. I would like to file that.

Acting Chairman MEAD. All right, it may be filed.

(The letter referred to was marked "Exhibit 118" and is included in the appendix on p. 2283.)

Acting Chairman MEAD. While you are still out there on the west coast—we have been hopping around here this morning—I just want to say something to straighten out the record. While I was out there we had an array of witnesses before us who testified with reference to potential aluminum production in the Northwest, and I was advised by the evidence of these collective witnesses that we

had the power, that we had the raw material, that the finished product was approved by the most authoritative sources in the world, and that the O. P. M.—and I believe your name was mentioned—had put every obstacle in the way of the locating of plants by Alcoa's competitors, even going so far as to bring an aluminum-company engineer out there with you, or with someone else, with veto power over any decision you or O. P. M. might make with reference to the location of a plant on a site approved by Bonneville Authority, and on a site approved by the owner of the plant; and I said, "Well, now, can I assume that the O. P. M. has purposely prevented your company from joining in the production of aluminum?" and I think the answer was, "That is an understatement. They did more than that."

Of course, it irked the committee, and I expressed a very strong opinion, but I would like to know if there is any truth in the summary of the evidence which I have just given to you.

Mr. BUNKER. I don't blame the committee for being irked at receiving information of that character. I read that testimony and I thought it was particularly outrageous. The facts, of course, don't in any way support it.

Nobody, of course, has ever had any power of veto. The situation is that in the middle of July, just before we recommended the Olin Corporation as operators of a plant in Tacoma for 30,000,000 pounds, we went to them and said, "What do you want to do? We have to make recommendations as to who shall build your plant, even though you are the operators. At the present time you haven't anybody who has had any experience whatever in designing and constructing a plant. Your entire experience has been confined to alumina."

I told them that I had made this arrangement with the Aluminum Corporation that, if they wished it, they could avail themselves of their services on a no-fee basis, for design, construction, and training of their employees, to turn the plant over for their operation. They were delighted and they told me to go ahead and make that recommendation, and on the 15th of July I made that recommendation to the War Department, that that plant be designed and constructed by the Aluminum Co., and operated by the Olin Corporation.

Mr. FULTON. At that point, Mr. Bunker, might I ask whether you told them that your recommendation of the Olin Corporation to operate an aluminum plant was conditioned upon their having Alcoa build it?

Mr. BUNKER. I most certainly never told them anything of the sort. I have throughout told them just this, that we don't care who builds that plant but we are responsible to a high degree for the following: First, to see that we recommend a responsible contract party to the Defense Plant Corporation or the War Department as far as their finances are concerned, as far as their operating and designing and technical ability are concerned, and that we will have to have assurances that they can properly design and construct and operate a plant; and we have to see the personnel that they would use and to examine the qualifications of any personnel; and that we were entirely open-minded as to whom they did use.

Mr. FULTON. But as to that point, I understand from your testimony just a minute ago that you did also tell them you didn't think they could comply with that themselves.

Mr. BUNKER. I told them there was no question about it. At the moment they didn't have anybody. They admit that fact.

Mr. FULTON. That being so, your recommendation to them was, in fact, conditioned upon their accepting—

Mr. BUNKER (interposing). We never made a recommendation to the Olin Corporation. We asked the Olin Corporation what kind of recommendation they would like us to make, and there is a very distinct difference.

Mr. FULTON. But you gave them definitely to understand, I take it, that the only recommendation you could possibly make to them was to be based on somebody else building their plant.

Mr. BUNKER. Mr. Fulton, I gave them no such feeling whatever. I gave them quite the contrary feeling. They were free to choose. They started from a point where they had no personnel, and you understand they were entirely aware of that fact. They were trying to get to this country Mr. Sjoeli, a Norwegian engineer, of whom they had had a very favorable report from his 20-year-old son as to his actual endeavors, meaning what plants he had constructed; to the extent that he had been an engineer in charge of design or construction or operation, they did not have any knowledge.

That was the condition in the middle of July. I never suggested anything except that they were free, that we could delay our recommendation until they could see whether they wished to go to any of the people who might be available, who were competent to design and construct a plant, and bring in their qualifications and present them to us. They were perfectly free agents.

Mr. FULTON. You were about to recommend a program of 600,000,000 pounds. You told them if they wanted to be in, you were ready to recommend them, provided the Aluminum Co. built the plant; or if they didn't, you would delay the recommendation and send in your recommendation to us.

Mr. BUNKER. I said we could not make a recommendation that anyone design or construct a plant and spend millions of dollars of the Government's money unless we knew and could be sure he could do an adequate and thorough job.

Mr. FULTON. And you told them you were ready to recommend as to the 600,000,000?

Mr. BUNKER. I told them we were ready to complete our recommendations. We had been talking about this plant for some time; you must bear that in mind.

Mr. FULTON. Did you, in making your recommendations as to this 600,000,000, before making your final recommendations, ever give the Defense Plant Corporation or the Aluminum Co. to understand that all of the plants were to be constructed by the Aluminum Co.?

Mr. BUNKER. I never gave them to understand that so far as I know. We made actual recommendations, finally, that the Bohn Aluminum Corporation were to design and construct their own plant, that the Union Carbide was to have a plant designed and constructed by the Aluminum Co., at its definite request, and the Olin the same,

and the Reynolds plant, of course, to be designed and constructed by Reynolds.

Mr. FULTON. The Bohn?

Mr. BUNKER. The Bohn, by Bohn.

Mr. FULTON. I asked that question because there are some notations on the drafts, the memoranda, and so on, which seemed to give the inference it was all to be done by the Aluminum Co., but they are not your papers.

Mr. BUNKER. I don't know anything about it. I know Reynolds and Bohn are going to build their own and design them.

Mr. FULTON. They are now?

Mr. BUNKER. They always have been, so far as I know.

I put up the same question, I might add, at the same time that I proposed to Olin that they could, if they wished, avail themselves of the services of the Aluminum Corporation; I asked the Union Carbide Co. and the Bohn Co., and the answer for Bohn was that they wished to design their own, and I said that was entirely satisfactory to us and so recommended. The Union Carbide said they wished to have the Aluminum Co. design their plant, and I so recommended.

Mr. FULTON. What experience had the Bohn Co. had in making aluminum?

Mr. BUNKER. The Bohn Co. has had no experience in making aluminum, although they have for a great number of years been considering putting up an aluminum plant and have some personnel familiar with the aluminum problem to do it.

Mr. FULTON. And you found they were familiar with the aluminum problem?

Mr. BUNKER. They haven't submitted their structural plans yet. We still give them the benefit of the doubt.

Mr. FULTON. I asked that question because earlier in the year O. P. M. had refused even to talk with the Bohn people about the question of what they might or might not be able to do, as you perhaps recall from the testimony of Mr. Holden.¹

Mr. BUNKER. As a matter of fact, I really don't. That is quite a surprise to me, because when I came into the office and first took hold of aluminum and magnesium Bohn was very prominently in the picture and has been in ever since. When I say "in the picture," I mean for the operation of an aluminum-ingot plant.

Mr. FULTON. But that was some few weeks after this committee held that particular hearing when the subject was brought up. To go over these materials generally, first on the bauxite, as I understand it—

Mr. BUNKER. (interposing). May I finish that little matter of this plant location and get it out of the way?

Acting Chairman MEAD. There is just one other thought I had in mind, and that was, Did you go to the coast with a representative of the Aluminum Co. and veto a plant site that was agreed upon by the Bonneville Authority and Mr. Eichelberger's company?

Mr. BUNKER. No, sir.

Mr. FULTON. Did Mr. Chadwick?

Mr. BUNKER. May I finish that story about the plant site, because you raised that, Senator?

¹ Hearings, Part 3, pp. 841-843, 851-852.

Therefore, it is very important to understand the Olin Corporation did then accept, and requested very earnestly that we secure the services of the Aluminum Co. to build their plant, and they tell me that they will recommend—they have not so recommended to us—that somebody else design it.

The Aluminum Co. were going to put in throughout prebaked carbon plants, and those are in distinct contrast to the Soderberg process. The Soderberg process is a Norwegian process, and of course if they use a Norwegian engineer, I am sure he will recommend the Soderberg process.

Senator WALLGREN. I thought they were going to use the Soderberg process.

Mr. BUNKER. That is what I am saying; if they now change to Sjoeli, they will use the Soderberg process, because that is the Norwegian process of manufacturing aluminum. The difference in plant construction is considerable. One calls for the prebaked carbon 14-foot pits, and when Mr. Chadwick found it was at tidewater level—I believe water was only 4 or 5 feet under the surface—and that you had to go to the expense and trouble of waterproofing and reinforcing pits which went down 14 feet below your surface on a prebaked carbon plant, which is what the Aluminum Co. was going to build, he felt their site was unsuitable, and he did tentatively select another site. When I say “tentatively,” that is just what I mean, for this reason: Mr. Chadwick had taken with him the chief engineer of the Aluminum Corporation who would be responsible for the design and construction of that plant, and they selected something which suited that problem. But it had to be tentative because we could not select and publish any site location until a contract was in existence so that somebody with the money could take an option and buy. In other words, we could not designate any properties, whether they were here, whether they were in Tacoma, whether they were in Massena, N. Y., until there was a contract in existence to cover them so the matter of recommendation and purchase could take place at the same time. We have never made a recommendation for a precise location in Tacoma.

Mr. FULTON. Getting back to the possibility of pits and the possibility of tidewater seeping in, and so forth, this was brought up in Seattle when we took this matter up with Mr. Eichelberger, and he said of course tidewater could get in if they were going to put in the old-style pits, but they were not going to do so, and he said they were going to put in the latest style plant which Reynolds had put in, and Aluminum Co. is putting them in; so what is your answer to that?

Mr. BUNKER. My answer to that is that that is a very peculiar form of communication between Mr. Eichelberger and the O. P. M., because the last communication we had was that he wished to go ahead and have the Aluminum Co. build an Aluminum Co.-type plant for him; and the first I heard that he was not going to do that was when he testified before you that he was going to have Sjoeli design it; he wanted Sjoeli to design and build the plant and use the Soderberg process. We had no information whatever to that effect, and we were totally unable to instruct our industrial plant site engineer to do anything except to follow the recommendations we made July 15, which were very well known to Mr. Eichelberger.

Acting Chairman MEAD. You get the picture, Mr. Bunker, as the committee, I believe, saw it on that occasion. This site near the water was picked out as a very economical site, having in mind shipping facilities, and so forth, by Mr. Eichelberger and his company, and it was agreed it was an ideal site by all the authorities out there. Mr. Chadwick came out with an Aluminum Co. engineer as his adviser, and they didn't get out of the car, they just drove by and vetoed the site, and then Mr. Chadwick agreed it should go over on higher land where it would be expensive to operate, and where probably after the emergency was over it couldn't stand the competition with other competitive companies. He said it should be located over there, and then when that location was agreed upon by Mr. Chadwick and by the company that was to operate the plant, the Aluminum Co. engineer vetoed that site, and so they were again without any site. That is what the committee was told.

Mr. BUNKER. I naturally don't know whether Mr. Chadwick got in or out of a car at any one point because I wasn't there. I realize Mr. Chadwick was very familiar with the engineering problems, which I am personally sure the chamber of commerce man was not familiar with. We had only one thing in mind, which was building an Aluminum Corporation-type plant, and it was necessary and appropriate that the Aluminum Company engineer, who was to accept a great deal of responsibility for constructing the plant, be present. All I can say is that I believe Mr. Chadwick is an extremely competent man, familiar with all of the engineering requirements of these plants.

Acting Chairman MEAD. The sorry part of the whole picture is that while we are struggling to produce bombers and pleading with the housewives to part with their pots and pans, we haven't yet agreed upon a site out there, and the authorities out there seem unanimous that the sites selected were ideal but they were always vetoed by O. P. M. authorities who were in concert with aluminum experts. Now, the fact that the sites haven't been selected indicates that the country has suffered an irreparable loss.

Mr. BUNKER. Well, sir, I think we have to start at another point. As far as I am concerned, the Olin Corporation hasn't yet advised us of what they wish to do. I said, "You have got to start somewhere, gentlemen. You have got to come to us if you want this plant designed by other competent people, and show us they are competent and show us your plans, and show us they can do a good job."

Senator WALLGREN. They claim they have done that and they were invited out.

Mr. BUNKER. They haven't done that, sir.

Senator WALLGREN. We have that in the testimony here.

Mr. BUNKER. I think that testimony is pretty bad. I have a letter from Mr. Elfred, consultant to Mr. Olin, as of last Friday, saying it is his intention to recommend to Mr. Olin that Sjoeli design this plant. That is the first record, as of last Friday, September 9, that we have had.

Mr. FULTON. That is why I asked those questions as to whether your recommendations to the Olin Corporation in the first place, by reason of your statement as to the Aluminum Co. being the only one competent to build it, was not in effect an indication to them that they had to take the Aluminum Co. or else.

Mr. BUNKER. It was no such thing, sir. I never suggested that the Aluminum Co. was the only company or group of people competent to build an aluminum plant. I have never thought so. I never suggested it.

Mr. FULTON. But at least you suggested Olin couldn't.

Mr. BUNKER. It was a ready-made system they could take advantage of if they wanted to. Bohn didn't want to; Union Carbide did. One said no and two said yes.

ESTIMATED COSTS OF PRODUCING BAUXITE AND ALUNITE

Mr. FULTON. Mr. Bunker, in order to try to cover a little more of the ground we had in mind, we discussed bauxite at some length and I asked you those questions about prices because it seemed to me different grades of bauxite would have different values, and that different stripping operations would be more or less expensive, and therefore it would be quite important for anyone, particularly these small persons you stated you were interested in, to know just on what basis the Government would pay for bauxite. Do you expect to pay the cost to the highest producer of producing bauxite, or the cost of all producers plus a percentage of profit, or what?

Mr. COTTON. I thought Mr. Bunker would like to clear up Senator Mead's question. Senator Mead said we hadn't picked sites and the program couldn't go ahead.

Mr. FULTON. That you haven't picked sites?

Mr. BUNKER. Certainly we have picked sites in the places where we have contracts.

Acting Chairman MEAD. I think that is sufficiently answered, except possibly we could get Mr. Chadwick to tell about the trip he made, in which he was supposed to have stayed in the car and vetoed a site, and vetoed another site with the approval of an Aluminum Corporation engineer.

Mr. FULTON. With respect to the bauxite, how do you expect to pay for it, cost plus profit or cost of the highest operation, or what?

Mr. BUNKER. I should hope that we could avoid having any two-price system and any cost-plus system. It seems to me that the Government is always better off in buying any commodity if it can induce maximum production on the basis of fair prices, and that is certainly the system that should be tried out.

Mr. FULTON. But here you have a situation, Mr. Bunker, where you have some high-grade bauxite which doesn't today have a value and which hasn't had a value of more than a certain amount per ton commercially. Now, you want to encourage, as I understand it, the production of a lot of low-grade bauxite that is going to be a lot more expensive to produce. Do you think that the Government ought to pay a price high enough to bring in all that low-grade bauxite, and at the same time give all the owners of the high-grade bauxite almost what amounts to an inordinate profit? Is that your present plan?

Mr. BUNKER. My present plan, first, is to give nobody an inordinate profit under any conditions.

Incidentally, our program suggests that not 1 single ton of high-grade bauxite enter into the production of aluminum metal—not 1

ton—because the demands on this country for high-grade bauxite, for which there are no substitutes at all, are very great, and we feel that the demands for bauxite for the abrasive and chemical industry will reach a peak of 801,000 tons a year of domestic production. Now, maybe 200,000 tons of that can be low grade for some of the chemical uses, but certain 600,000 tons, and maybe more, must be high grade, and that doesn't go into the production of metal at all.

Since that deposit has been laid down in that field so that about one-third of that field is high grade and two-thirds of that field are low grade; and since we want to operate that field by taking a cross section of ore out, and incidentally from everybody who owns it, to the extent of the ownership, we would like to keep the ratio of 1 ton of low grade to 2 tons of high grade; therefore, if you cannot substitute for high-grade abrasive material any other material, and that will take up to 800,000 tons a year, you have to have 1,600,000 tons a year of low grade and use that exclusively for metal production, in my opinion, to best serve the country and best serve the field, and that is our present program.

Mr. FULTON. To use only low grade?

Mr. BUNKER. To use low grade from that field for metal production. As a matter of fact, we have a chart which you might be very interested in, which shows the proposed flow sheet of all imported bauxite and domestic bauxite as we believe it would best serve the country's interests in this emergency.

Mr. FULTON. What is the lowest percentage of bauxite that you intend to use?

Mr. BUNKER. Forty-five percent.

Mr. FULTON. And that, I take it, approaches high-grade bauxite, doesn't it—because I thought anything over 50 was high.

Mr. BUNKER. We have classified our bauxite into 55 percent and above as high-grade bauxite; 50 to 55 as second-grade bauxite; and 45 to 50 alumina, low-grade bauxite. We expect to use the second and third grades exclusively for the production of metal.

While we are on that, I would like to call your attention to the fact that the low-grade bauxites contain well over 200 percent more alumina than any of the other materials we are talking about.

Mr. FULTON. It does present this question where some of that will be cheaper than others, and I wanted to know what, if any, plans you had to take care of the question of bringing in enough of the marginal low grade to satisfy your demand without giving an inordinate profit to those who hold what formerly was marginal but, according to demand, is no longer marginal.

Mr. BUNKER. I would certainly think the most desirable procedure would be for the Government to put out a schedule offering varying prices from high grades down to low grades. If that will bring out the material at those low prices, you will have solved the problem. If it doesn't, you will have to go farther.

Mr. FULTON. Such a schedule would be useful to these small miners who want to know whether they should go into these stripping operations or not, and when can we expect that such a schedule will be prepared?

Mr. BUNKER. You know, we are preparing all the time—we are studying the question of possible cost and fair prices for bauxite. I

have a good many studies here which are completed as to that. But I do not think that the Government would be well advised to post a schedule for a long time to come at which they were willing to commit themselves for fixed amounts of bauxite. I don't think that would be the way to proceed.

Mr. FULTON. In other words, the small operator of a small mine in Arkansas has no way, and will have no way, by which he can determine whether his operation would be profitable or would result in a loss.

Mr. BUNKER. Taking an ordinary chance that he is going to find his material where the drills indicate it to be——

Mr. FULTON (interposing). That wasn't the question.

Mr. BUNKER. Just a minute: I think I can answer the question. You asked me whether he would know. I am trying to tell you whether he would know. He can then either try to work out a deal with one of the private dealers, saying: "Will you strip my bauxite material and mine it and pay me 50 cents or a dollar a ton, depending upon its grade, as royalty, so that I have no responsibility, being a small man, for equipment or for increasing my investment in the stripping process?"

Mr. FULTON. By a "small man," I meant one that had \$100,000, but the question in his mind is, if he goes and spends that on stripping equipment and mining operations what assurance has he that he will be in the program or out of the program when it comes to buying the bauxite either for these big alumina plants or the smaller plants?

Mr. BUNKER. There has been a system in force in many countries, and maybe it will be put in force in this country, providing a two-price system in order to induce people of different classes, and having properties containing different values of material, to bring it out. I hope we can avoid any two-price system. It is much more favorable to the Government if one can avoid that, and it certainly isn't necessary to know at this date whether you can have time to continue to study this and talk to all of the operators, which is what we are doing, not needing any bauxite at all, not being able to sample any bauxite at all at the present time, or whether we must rush in to issue a schedule of prices which might be quite ill-advised, or into commitments on the part of the Government to do a lot of work which may be done for nothing, as far as the Government is concerned.

Mr. FULTON. Then I take it the answer is that he couldn't find out in this case, but he might be able to find out 6 months from now; is that right?

Mr. BUNKER. I think he can find out, and probably knows.

Senator BALL. Would the industry have a pretty good idea what those prices will be?

Mr. BUNKER. I should think you might at the mine head——

Senator WALLGREN. Is that the question?

Mr. BUNKER. I like to make general statements. The Government, as far as we know, is certainly not at the moment a buyer of Arkansas bauxite—at this moment. I should think high-grade bauxite might sell at the pit head for something like \$6 a ton.

Mr. FULTON. What has been the nature of your discussion with the larger producers? Have you told them you might not buy any of their bauxite because you might find it possible to develop it from the smaller ones?

Mr. BUNKER. We have told them that the whole field, in our opinion, should be operated ratably and the material sold to the Government at fair prices, and that it is our intention to work out a fair price vis-à-vis the Government.

Mr. FULTON. That means, in other words, if a certain percentage is ready to develop the bauxite, the small as well as the large mines can produce it at that site and the large mines be excluded from producing more than the ratable amount.

Mr. BUNKER. We would like to see the entire burden carried ratably. If we know a man owns 10 percent of the field, we would like to see him contribute 10 percent. We would like to see this taken out ratably so that the burden is borne equally by all in terms of what they own.

Actually, when you meet physical conditions in mining a property, maybe in order to get your requirement you have to take disproportionate amounts of material from one group, or you may find it is advisable to concentrate mining activity in one district for a period of 6 months and then turn your attention to another district for 6 months.

Mr. FULTON. I take it, then, they couldn't rely on the ratable thing as to any one particular company or area.

Mr. BUNKER. You can have it as a goal, and it will very definitely guide you. You will work toward it.

Mr. FULTON. It is not exactly the same as raising capital at a local bank.

Mr. BUNKER. I don't think you could raise any capital unless you had a firm order in hand to supply bauxite for a number of years to the Government under a Government contract. Nobody knows how long the emergency may last or how long there will be a market for bauxite, and when a man has to strip enough material to mine it for a good many years and says, "There may not be a market 6 months after I have done it," particularly if he is a small man, he is going to question that operation very seriously.

Senator BALL. Mr. Bunker, I was interested in one thing. You said you spent quite a bit of time on this alunite. Have you had any comparative cost figures on making aluminum out of that in contrast to this low-grade bauxite?

Mr. BUNKER. No; we haven't had anything that I would call really accurate or comparative. For just general rule-of-thumb cost, I would suppose that today you would produce a ton of high-grade alumina from high-grade bauxite in this country for \$30 or under. I should think you would produce it from your high silica bauxite for thirty-two or three dollars; and those have to be taken as guesses. They are the best that I can make. I think you can produce from alunite on a certain basis of accounting, not particularly related to the exhaustion period of your ores, not taking full consideration of this uncertainty, for \$35 plus whatever patent royalties you might have to pay, which have been suggested as a minimum of \$5. I have been thinking in terms of thirty, thirty-three, and forty for those various grades of material per ton.

Senator BALL. You mean the low grade would be about thirty-three?

Mr. BUNKER. The low-grade, the high-grade bauxite, and the alunite.

Mr. FULTON. Was that your cost of production or price?

Mr. BUNKER. I was thinking of cost of production in all cases the same.

Mr. FULTON. Is that based on a study of accounting records?

Mr. BUNKER. It is not based on a direct study of accounting records. It is based on two various series of testimony of the Aluminum Corporation, covering about 6 years, which show that the price has dropped on high grade from around \$47 to about \$32, and that price was achieved a great many years ago.

Mr. FULTON. I was talking of cost, not price.

Mr. BUNKER. Each one of these things that I have given was cost.

Mr. FULTON. And have you examined that underlying material on which that study was made, or on which that testimony was given?

Mr. BUNKER. No, sir.

Senator BALL. Is this alunite process patented so that there would have to be royalties?

Mr. BUNKER. That is a question that has got to have very serious study, in the last analysis. All of the basic patents under sulfuric acid treatment for the extraction of alunite were not the property of the Kalunite Corporation and were developed years ago and have expired. They represent that they have 20 very useful patents in the arts, and what is a fair price to pay for those, I can't say. That examination will have to be taken up when they start to negotiate for the contract which we recommended some time ago. One of the parts of our contract was that we recommended the Defense Plant Corporation negotiate with that company to come to a proper arrangement for the consideration of royalties, and so forth, and for the design and construction of the mill built by the Kalunite group.

Senator WALLGREN. Mr. Bunker, I have here in my hand a copy of the report of the Bureau of Mines, a recent copy, July 30. They go on to say that analysis of the cost data shows that alumina can be produced for \$35 a ton. This cost will permit it to compete with Bayer alumina on the basis of available cost data for the Bayer process. The estimated cost of producing aluminum metal is 11.865 cents per pound.

Mr. BUNKER. That is the same figure that I have given. I have added a royalty to it.

Senator WALLGREN. Don't you think with that sort of report it might be advisable to go into the production of aluminum for alunite?

Mr. BUNKER. We have made a recommendation in that connection, Senator. You have some very striking things also said by the Bureau of Mines. While they don't contradict one thing, and that is cost figures, or the chemical feasibility, they do contradict very definitely the availability of ores. I can quote from it, if you like.

Senator WALLGREN. We go back—let's say Japan has been manufacturing from alunite, Germany has manufactured from alunite, other countries have used alunite, but I believe in your earlier statement you went on to say that their alunite is a higher grade.

Mr. BUNKER. I said that in the discussions of the National Academy concerning Japanese production and the German production of aluminum from either alunite or from clays, men such as Dr. Landis, who had been particularly in Germany and examined them all, said they were very different in their nature from the clay—that is the clay problem in Germany—with which we had to deal. The figures which

he suggested were that 3,000 tons of aluminum metal was the maximum aluminum that had ever been produced from clays throughout all of the German experiments in all times. He said that he made personally a very careful examination of that.

Senator WALLGREN. I thought during the last war they made their aluminum out of alunite.

Mr. BUNKER. I understand that they mined some two or three hundred thousand tons of raw material and had extremely bad success with alumina. I have only my notes. I haven't made a personal examination of that.

The Japanese clays were described at that meeting as very bauxitic in nature and differing largely from anything we had to deal with, and they subjected their bauxite to the Bayer method of treatment or extraction. We have here figures on Japan showing that her production, including occupied countries, seems to be between 45,000 and 55,000 tons a year, depending on which one of these estimates you take. I can find no evidence anywhere for anything like 180,000 tons, and her recent desire when we had free trade to buy aluminum from us seems to indicate that couldn't have been the case. I would doubt very much if she is making any material in any great quantities by a sulfuric-acid process, but it may be. If our back were pushed to the wall and we didn't have available to us the standard method of making aluminum cheaply and we had exhausted all of our bauxite deposits, we could certainly make it out of clay or out of alunite, particularly out of clays.

If you used every ton of material in this Bureau of Mines report by Dr. Thoenen, which is the last word, to produce aluminum, you wouldn't make enough aluminum to fill the needs of this country for 1 year. Now, the only thing that has been suggested is that we produce 4 percent of our alumina requirements out of alunite, and we have suggested, why not go along and produce, until we learn a great deal more both of our deposits and the commercial results of operation, oh, about 1 percent; and that is the difference in this situation—and a good many millions of dollars of immediate expenditure on the part of the Government.

Senator WALLGREN. This report goes on to say:

There are available in the Marysvale region in Utah at least 3,800,000 tons of ore that can be treated by the Kalunite process for the cost given in this report. This amount of ore is sufficient to assure a life of at least 10 years for a plant producing 200,000 tons of alumina per day.

That is the Bureau of Mines report.

Mr. BUNKER. Yes, sir; I am very familiar with that report, but they do say a great many other things, all throwing grave doubt on those ore reserves. Their conclusion is that with ores containing 20 percent or more of the necessary material, the process is entirely feasible from a chemical-engineering standpoint.

Now then, they say in the analysis of that report which was made by the Chief Engineer of the Metallurgical Section of the Bureau of Mines—

* * * whereas, if we take 20 percent recoverable alumina as the minimum that can be profitably treated, all of the replacement deposits on the basis of Thoenen's average analyses would be excluded.

That is the report that you have got there, and that is the Bureau's own statement.

On page 38 of the report to which you refer is a summary of all of the alunite deposits which the Bureau is willing to recognize throughout all of the States where they believe alunite occurs. They have a very difficult table here because it is in percent of alunite, and only 37 percent of that is alumina. Actually, you have to have a material to meet the conditions of fulfillment which Dr. Thoenen himself assumes—67 percent of alunite equals about 25 percent of alumina, which, as he says, is recoverable to the extent of 80 percent, and therefore 20 percent recoverable.

If you will look over that column, you will see that very, very little meets those conditions of all that tonnage. Here is 47,000,000 tons of material. Actually, if you take every single ton out of that table that reaches anything like that, you get 1,640,000 tons out of 47,000,000 that meet that condition. That would run a plant of 1,000 tons a day for 5 years. If you said that you could recover all of the vein deposits, not one of which, of course, is owned by the Kalunite Corporation, and that they have 1,443,000 tons, then you could run the plant for 10 years, but that means not running it on Utah ores alone but running it on the ores of every one of these States that appears in here, and assembling it at some central location.

Mr. FULTON. Which would involve a high transportation cost.

Mr. BUNKER. And if you had all of those ores, and that is all you had, and ran it all through in 1 year—everything you have got on the 25 percent down to 20 percent recoverable—you could supply the needs of this country for about 6 months.

Senator WALLGREN. What is the date of this report you are quoting from?

Mr. BUNKER. This is February 1941.

Senator WALLGREN. This copy was sent to you by the Secretary of the Interior.

Mr. BUNKER. Yes; I think it was.

Senator WALLGREN. Just recently?

Mr. BUNKER. I think within a month or two ago, that is right. I think we are probably talking about the same material, Senator. We have talked constantly, you understand, with the Bureau of Mines, with the Geological Survey.

Senator WALLGREN. Mr. Bunker, I guess we will have to take it up at a later date, but we would like very much to go into the matter of magnesium with you and what you are doing to bring about the production of magnesium in this country. I guess we can't possibly take that up today. So you go on with your aluminum story.

ALUMINUM PRICE-FIXING

Mr. FULTON. In addition to the bauxite which we were just discussing, you have to have alumina, and you will require around two pounds of alumina to one of aluminum, or, roughly, 2,000,000,000 more pounds of alumina each year; is that not true?

Mr. BUNKER. Yes.

Mr. FULTON. From whom are we to get that alumina?

Mr. BUNKER. Actually, this country is going to need over 3,000,000,000 pounds a year of alumina for this program.

Mr. FULTON. You mean you include the alumina we need for our existing program which will require approximately sixteen to seventeen hundred million?

Mr. BUNKER. You will find it won't calculate out very easily, because the alumina requirements are not only for metal, but again for abrasives, but we have looked at the aluminum system as one big system that should be operated on the most efficient basis, no matter who owns the deposits of the raw material or the production facilities of alumina.

Mr. FULTON. Specifically, who will produce the alumina and how much?

Mr. BUNKER. May I just tell you a little bit about this? We have in this chart I just exhibited there assumed that the best thing for this country would be that there was a free interchange between companies and ownership, whether the Government or not, of intermediate products, so that you did not have to crisscross freights just depending on ownership. That means that fair prices for intermediate products, such as alumina, must prevail, in my opinion, in all plants, so that people can be equally treated and use anybody else's alumina.

Mr. FULTON. In other words, the Government will fix the price of alumina; is that what you mean?

Mr. BUNKER. Maybe the Government will approve it in conjunction with negotiations with other people. I don't mean the Government should fix it, necessarily.

Mr. FULTON. Who are the "other people"?

Mr. BUNKER. Look at the question. In the first place, the new plants will require 1,200,000,000 pounds of alumina—that is, the Government plants. We have recommended two plants in Arkansas, to use only low-grade material, to produce 1,000,000,000 pounds of that.

Mr. FULTON. By whom?

Mr. BUNKER. Government plants, both to be operated by the Aluminum Corporation.

Mr. FULTON. And what other recommendations have you made?

Mr. BUNKER. We have made another recommendation for the construction of a 320,000,000 annual capacity plant erected at Mobile, and to be operated by the Aluminum Corporation.

Mr. FULTON. And have you made any other recommendations?

Mr. BUNKER. No. That, together with existing facilities, will provide the country with something over 3,000,000,000 pounds a year of alumina.

Mr. FULTON. So that the entire expansion in alumina is to be by Government-owned plants operated by Alcoa.

Mr. BUNKER. That is correct; yes, sir.

Mr. FULTON. And when you said that the Government was in effect fixing the price of alumina by negotiation, you meant by negotiation and agreement with whom?

Mr. BUNKER. You have Reynolds producing 100,000,000 pounds of alumina, you have the Government plants producing alumina, and

you have the Aluminum Corporation producing alumina. I should think they ought to all get together and say what is a fair price of alumina.

Mr. FULTON. Suppose they don't?

Mr. BUNKER. That is a problem we will have to meet when it arrives.

Mr. FULTON. The Reynolds plant was put up by private capital except to the extent financed by their R. F. C. mortgage loan?

Mr. BUNKER. That is correct.

Mr. FULTON. What I was asking was the fixing of the price of the alumina which is produced by the Government-owned plants which are operated by Alcoa. Does the Government retain the absolute right to fix the price of that alumina?

Mr. BUNKER. I think that is a legal question. There is a price-control clause in that contract that you are in a better position to judge than I am.

Mr. FULTON. Do you remember the contract of August 19 between Alcoa and the Defense Plant Corporation?¹

Mr. BUNKER. Yes.

Mr. FULTON. As I remember that contract, it merely specifies that the price shall be one fixed by the Defense Plants and Alcoa. Is not that your understanding?

Mr. BUNKER. Well, we made a recommendation that the product passing through those plants be owned by the United States Government and the Government have complete title to the product of those plants, and I have a great deal of confidence in Mr. Jesse Jones, and I am sure that he is taking care of being able to effect those recommendations.

Mr. FULTON. Did you read the contract?

Mr. BUNKER. I did read the contract, but, on the other hand, I am not a lawyer.

Mr. FULTON. Did the contract provide that the Government could fix the price of the alumina provided in its own plants?

Mr. BUNKER. I frankly am not a lawyer and my interpreting of the contract would not be satisfactory, I am sure.

Mr. FULTON. Would it require a lawyer to read that provision of that contract for that purpose?

Mr. BUNKER. I don't know. My experience is that it is always better to have the lawyers read them.

Mr. FULTON. Well, I think this contract probably ought to be put in the record.

Acting Chairman MEAD. I suggest the contract be made part of the record.

(The contract referred to was marked "Exhibit No. 119" and is included in the appendix on p. 2284.)

Mr. FULTON. Will you look at paragraph 13 of that contract?

Mr. BUNKER. I frankly would like to say that I really do not wish to comment on this contract, that I don't think it is appropriate that I should do so. I am not a lawyer. It is proposed by a department that is not operated by O. P. M., and it is in no sense a part of my function.

¹ See Exhibit No. 119, appendix, p. 2284.

Mr. FULTON. Did you have anything to do with the preparation of this contract?

Mr. BUNKER. I had nothing to do with the preparation of that contract.

Mr. FULTON. Do you approve the various provisions in here?

Mr. BUNKER. I really would prefer—if it is a contract which is not a function of our department it has not come to our attention for approval or disapproval in any way, shape or form.

Mr. FULTON. In other words, you don't want anything to do with the contract.

Mr. BUNKER. I feel that the money spending of the Government belongs to the R. F. C. or its associated branches and it is their responsibility.

Mr. FULTON. You did read it, however?

Mr. BUNKER. I read it.

Mr. FULTON. Did you read it before it was executed?

Mr. BUNKER. I really don't know.

Mr. FULTON. Did you make any recommendations with respect to it, to the Defense Plants Corporation?

Mr. BUNKER. We made recommendations; we made recommendations to the War Department, not to the Defense Plant Corporation.

Mr. FULTON. Would you look at page 5, the fourth line from the bottom, paragraph 13,¹ and tell us whether you recommended the language there with respect to the fixing of prices on alumina in the Government's own plants?

Mr. BUNKER. I think it is entirely inappropriate. Mr. Chairman, that I comment on something that is not a product of our department. The Defense Plant Corporation is the money-spending department of the Bureau, and I think if we discharge our responsibilities to our agency that we have done quite enough, and if we start to undertake a searching examination of another agency I would want to get all of our counsel and everybody else to help me work out an opinion. I just think it is inappropriate that we do so. I have not had a signed copy of this contract. I don't know whether it is a final draft I have read, and I should like, Mr. Chairman, to be appropriately excused from rendering opinions which must necessarily be half-baked on a legal document of this size.

Mr. FULTON. Mr. Bunker, I asked you for no opinion. I asked whether you had read that particular provision and made any recommendation with respect to it.

Mr. BUNKER. I have made no recommendations at all since I read that contract.

Acting Chairman MEAD. It occurs to the chairman that perhaps the parties that signed the contract may have requested information from your agency and they may have requested the collaboration of your agency in the negotiations leading to the signing of the contract. Therefore, if you had anything to do with the contract, if you offered any advice to the other agencies of the Government, I think the committee ought to have the benefit of your views, the views you expressed to them, because undoubtedly when we call them they will tell us they relied to a certain degree on the information

¹ Exhibit No. 119, appendix, p. 2284, at p. 2287.

and evidence which you gave them, and then if we have a reluctance on the part of all these witnesses to give any information with reference to a matter with which two or more agencies had to do, the committee will be in the dark.

Mr. BUNKER. Well, Mr. Chairman, we made our original recommendations, copies of which I believe have all been filed with this committee. I know that Mr. Fulton and Mr. Stix¹ have had them, and I believe that you have copies of them.

Subsequent to that, and subsequent to a letter summarizing all recommendations, a letter of August 4 from Mr. Knudsen, I believe, to Mr. Jones, we have made no recommendations, we have participated in no negotiations nor had anything to do with drawing one paragraph or sentence of these paragraphs, nor have we known what form or shape these contracts were taking.

Mr. FULTON. And specifically, that answer would apply to this paragraph 13?

Mr. BUNKER. It would specifically apply to any paragraph in that contract.

Mr. FULTON. And also to the appendix of the contract containing the provision for the formulation of profits and prices.

Mr. BUNKER. It would apply to every line and sentence of this contract.

Mr. FULTON. That was all my question asked, whether you had made any recommendation on this.

Mr. BUNKER. You have a copy of all of the recommendations which we have made with respect to this contract.

Mr. FULTON. And then, I take it, you made no recommendation with respect to the fixing of prices or the terms of profit under this contract?

Mr. BUNKER. We made a recommendation which said that the material, in our opinion, should be the property of the United States Government.

Mr. FULTON. I was talking about the fixing of prices on alumina and aluminum and the profits and fees to be allowed under this contract.

Mr. BUNKER. We made no recommendation as to profit or fees.

RECOMMENDATIONS OF O. P. M. RE ALCOA-DEFENSE PLANT CORPORATION CONTRACT

Mr. FULTON. When did you make your recommendation? I understood you to say August 4.

Mr. BUNKER. No, sir; I think when you read the testimony you will see we summarized the previous recommendations on the 4th of August. We made our recommendations on the 1st of July for 335,000,000 pounds of aluminum ingot plants and for 400,000,000 pounds of alumina plants. We made the remaining recommendations on July 15 for 260,000,000 pounds, increasing one of the previous plants recommended by 5,000,000 pounds, so that the whole 600,000,000-pound program was recommended on July 15. On July 18 we changed the location but not anything affecting the design or construction of the plant. We changed one location from

¹ Henry Stix, committee investigator.

Cascade Locks to Troutdale. When I use those dates, those are the dates of original recommendation. We had not on those dates fulfilled all of our duties in connection with those recommendations. We had some subsequent duties. We had to provide general cost data, general location data; that was provided, but we had to have recommendations of contract approval and of plant site approval. Now I am informed that those were received, the first recommendations of July 1 on July 10, the second recommendations of July 15 on July 20, so those would really be the controlling dates, in my opinion.

Mr. FULTON. Would your recommendations, in summary, be that you recommend the plants, that is, the capacity of the plants, the location of them, the ownership of them by the Government and the working out of further details by the Defense Plant Corporation?

Mr. BUNKER. No, sir; we also recommended the operators. We recommended the design and construction company which, as we have shown, was in several instances not the same as the operating company, and of course we recommended their size, and so forth, general engineering, amount of labor required, skilled and unskilled, area needed for the plants, machinery requirements.

Mr. FULTON. Then you recommended a great deal more specifically the types of plants and machinery, and so on, than is contained in the contract as actually signed by Alcoa and Defense Plant?

Mr. BUNKER. We presented more detail; yes.

Mr. FULTON. And did you say that you recommended that the plants, or some of them, be constructed by someone other than Alcoa?

Mr. BUNKER. No, sir; I said other than the operator.

Mr. FULTON. The operator in each case is Alcoa, is it not?

Mr. BUNKER. No, sir; no, sir. After all, we have the Reynolds Co., the Bohn Co., the Union Carbide Co., and Olin Corporation.

Mr. FULTON. No; I am talking about alumina.

Mr. BUNKER. In the case of alumina, the operator in all instances is the Aluminum Corporation.

Mr. FULTON. So your recommendation is the same as that of the contract—construction by the operator, and both by the Alcoa?

Mr. BUNKER. That is correct.

Mr. FULTON. With respect to the time, when do you expect these plants to be ready for operation to produce alumina?

Mr. BUNKER. I should think they would be ready about the same time that the aluminum ingot plants would be ready; with good luck in 9 or 10 months; with not so good luck in 12 months, with one exception. I should think that the construction down at Mobile would be very much more rapid than the construction in Arkansas.

Mr. FULTON. Since your time has now been at least 3 or 4 months postponed over the time that you have had in mind originally when you asked the Power Commission for power to be available, in April of 1942, have you taken up with them the question of what power they can get available during that next 3 months' period?

Mr. BUNKER. Yes, sir; the exhibit which I filed, the letter from the Interior Department, goes well into the year 1943.

Mr. FULTON. And some of this power, at any rate, is available now, or will be available very soon and we will have no use for it until we can get these plants built, will we?

Mr. BUNKER. Well, sir, the earliest power which you find available is in April of 1942, and that is not all of the power that we are contemplating using. The rest of the power will be available in September; that is, in the Northwest area. As to the remaining power for these plants, there are a great many situations where the power will not be available on a permanent basis for a year after the plants are completed.

Mr. FULTON. But I was talking about those situations in which power, I believe, is available today, if we had plants that could use them today; isn't that true?

Mr. BUNKER. No, sir; I don't know of any power that is available today.

Mr. FULTON. Isn't there any power available at Boulder Dam or Grand Coulee?

Mr. BUNKER. If it is available, I don't think it is available on site.

Mr. FULTON. I don't mean that. I meant the generators are installed and the power is available.

Mr. BUNKER. That is only one part of the problem. These transmission lines are a very serious part of the problem.

Mr. FULTON. Are they under construction now?

Mr. BUNKER. I don't know.

Mr. FULTON. Are any of them?

Mr. BUNKER. I should imagine the Boulder one was, but I can't tell you.

Mr. FULTON. Has O. P. M. made any plans for construction of those power lines before bad weather sets in?

Mr. BUNKER. No; I don't think that the O. P. M. makes plans for the construction of power lines. I think that is a matter for the power authorities to do.

Mr. FULTON. Have you made any recommendations as to specific construction that should be undertaken at once?

Mr. BUNKER. Of course, I don't run the power department over there, you know. The origin of these sources of available power all sprang from a finally agreed-to report and joint report of the Federal Power Commission and the power unit of the O. P. M., and of course the matter rests in the hands of the power unit of O. P. M. and the Federal Power Commission. It is an interstate proposition.

Mr. FULTON. As a person in Aluminum, do you know whether the Power Department of the O. P. M. has made any recommendations for the construction of the transmission lines now, in good weather, to these sites which you as Chief of the Aluminum Division have already selected as being the sites for the aluminum plants?

(Senator Wallgren took the chair.)

Mr. BUNKER. As far as responsibility of our Division is concerned, I think it is a fair statement to say that from the dates I have just given you on recommendations, the power authorities could have gone forward immediately and ordered 95 percent of all of the material ever needed for the supply of power to the locations recommended.

Mr. FULTON. And has the Power Division of the O. P. M. so recommended?

Mr. BUNKER. Well, I honestly don't know exactly what they have recommended, I am sure.

Mr. FULTON. Just one or two more questions with respect to the aluminum plants. You, of course, having read this contract with Alcoa, note that the plants are to be built by the Government to the extent of a possible \$52,000,000. Who is to build the plant of Reynolds for the recommended expansion of Reynolds?

Mr. BUNKER. I don't know whether any contract has been signed.

Mr. FULTON. Whom do you recommend build it and pay the expense of building it?

Mr. BUNKER. The Reynolds Co. We recommend a Government plant to be built by Reynolds Corporation.

Mr. FULTON. And paid for by the Government as in the case of the Alcoa plants?

Mr. BUNKER. Just the same; yes.

Mr. FULTON. And the same would apply to Olin and Bohn and Union Carbide?

Mr. BUNKER. With the exception that they were not constructing their own plants, as I said before.

Mr. FULTON. Except Bohn.

Mr. BUNKER. Bohn, that is right.

Mr. FULTON. All right; are the sites for these plants selected now?

Mr. BUNKER. The sites are selected for the plants for which there are contracts, with the exception of the Arkansas plant.

Mr. FULTON. There is only one company that has a contract, as I understand it, and that is Alcoa.

Mr. BUNKER. That is correct.

Mr. FULTON. Are those sites sites which have been presented to you and approved by you?

Mr. BUNKER. Yes.

Mr. FULTON. Have they, so far as you know, been approved by the Defense Plant Corporation today?

Mr. BUNKER. I don't know about the Defense Plant Corporation.

Mr. FULTON. When is the construction of those plants to start?

Mr. BUNKER. That I don't know. That is a matter for Defense Plant Corporation.

Mr. FULTON. When were you told they would start?

Mr. BUNKER. I haven't been told when construction would start.

Mr. FULTON. Have you ever asked the Aluminum Co. when they expect to get around to starting the plants?

Mr. BUNKER. Yes; I have talked to them a great number of times.

Mr. FULTON. When did they say the construction would be started?

Mr. BUNKER. The minute the contracts with the power authorities are signed, so they know they will get the power.

Mr. FULTON. In other words, unless they get contracts of the type referred to in this August 19 contract—and they have 90 days—they are informed they won't have to start the building of those plants.

Mr. BUNKER. No; I didn't say that. I said the other affirmative thing, that they were ready to break ground the minute they sign the power contracts.

Mr. FULTON. And they have up to 90 days to do that, in accordance with that contract; is that true?

Mr. BUNKER. You are back at the contract again.

Mr. FULTON. And it provides that if they don't do it within 90 days, they are subject to cancelation.

Mr. BUNKER. Yes. The only thing I can say is that we are going to provide a department in the aluminum and magnesium section, and the minute orders come through needing priorities, we will be prepared to run them through for both aluminum and magnesium plants, to hasten every piece of equipment needed in those plants.

Mr. FULTON. But to date you haven't been given the affirmative date when these plants are going actually to have construction started on them?

Mr. BUNKER. I have not.

Mr. FULTON. And I repeat, the contract provides, does it not, that if contracts for power have not been entered into within 90 days from the date of the execution of the agreement, that plant for which power has not been contracted for may be eliminated from the provisions of the agreement?

Mr. BUNKER. You are back at the contract.

Mr. FULTON. Again I ask you if you can't read the paragraph with respect to such provisions. You know that the contract contains such a provision, don't you, Mr. Bunker?

Mr. BUNKER. I really am not very familiar with it.

Mr. FULTON. When you read it, didn't you notice it had a provision with respect to power, paragraph 23, and that the second half of that paragraph, on page 11, states that if they can't get the power contracts, the thing can be canceled—

except that Defense Corporation shall in such event reimburse Alcoa for all of its expenses, and hold Alcoa harmless from all obligations theretofore incurred by it in good faith in accordance with the provisions of this agreement with respect to such plant or plants.

Is that in the contract?

Mr. BUNKER. You just told me it is in there; yes.

Acting Chairman WALLGREN. Do you think the Government's best interests are served by that kind of provision?

Mr. BUNKER. Senator, these have been drawn by defense plants. I understood they have had the very competent attention of Mr. Jones, and I am sure that he feels—I am sure he has competent counsel—that he has in here those appropriate provisions that are required to deal with the company fairly and with defense plants.

Acting Chairman WALLGREN. We will recess now and at 2 o'clock hear Mr. Husbands, and at 3 o'clock Mr. Jones. I presume we will want to call you again later, Mr. Bunker, on the magnesium matter.

(Whereupon, at 1 p. m., a recess was taken until 2 p. m. of the same day.)

AFTERNOON SESSION

The committee reconvened at 2:12 p. m., Acting Chairman Mead presiding.

Acting Chairman MEAD. The committee will please be in order.

The committee originally planned to hear Mr. Husbands at this time, but Mr. Husbands has another mission this afternoon so the committee will hear Mr. Jones.

My information, acting as substitute for the chairman, is that the committee wanted to hear you, Mr. Jones, with reference to a

contract between the Defense Corporation and Alcoa. Is that so?

Mr. FULTON. Yes.

Acting Chairman MEAD. I presume that probably it would be better for the counsel for the committee to proceed with an explanation of it.

**TESTIMONY OF HON. JESSE H. JONES, SECRETARY OF COMMERCE,
AND FEDERAL LOAN ADMINISTRATOR, WASHINGTON, D. C.**

PROVISIONS OF DEFENSE PLANT CORPORATION CONTRACT WITH ALCOA¹

Mr. FULTON. Mr. Jones, the committee has a copy of contract dated August 19, 1941, between Alcoa and the Defense Plant Corporation, as a confirming copy, bearing your signature as having approved it. Do you recall such a contract?

Mr. JONES. Yes, sir.

Mr. FULTON. And in connection with the negotiations leading up to the consummation of that contract, were they conducted by you or by someone under your direction?

Mr. JONES. In substantial part by me in cooperation with our counsel, Mr. Durr, who is here, and Mr. Husbands, who is president of the Defense Plant Corporation.

Mr. FULTON. And were you personally familiar with all the terms and provisions of that contract at the time it was signed?

Mr. JONES. I think I was, sir.

Mr. FULTON. One of the reasons the committee is particularly interested in the contract is due to the wording of parts of it. For example, it seems to be a little surprisingly worded, especially to lawyers. Page 3 thereof I note—

Mr. JONES. Page what?

Mr. FULTON. Page 3. I note that in referring to Alcoa's obligation you don't even require it to exercise good faith.

Mr. JONES. Don't we?

Mr. FULTON. Would you look at the fifth line from the bottom of page 3?

Mr. JONES. Where are you reading?

Mr. FULTON. In the fifth line from the bottom of page 3, in article 7, it says that Alcoa shall

* * * exercise good faith or that degree of care which they normally exercise in the conduct of Alcoa's business.

Mr. JONES. Do you think it should have been "and"?

Mr. FULTON. By reason of the word "or," it would mean that either one is enough, and it wouldn't be necessary to use "good faith."

Mr. JONES. I think that is technical. Where is the line?

Mr. FULTON. The fourth from the bottom and the fifth from the bottom. I have never seen a contract with similar language.

Mr. JONES. May I catch up with you? I don't agree with you that "or" means one or the other. "Or" means both.

Mr. FULTON. "Or" means both?

Mr. JONES. Certainly; it certainly means good faith.

Mr. FULTON. It says one or the other in the contract.

¹ In this connection see also statement of Arthur V. Davis, Chairman of Board of Directors, Aluminum Co. of America, regarding negotiations leading up to this contract, which appears in the appendix on p. 2312 et seq.

Mr. JONES. It was intended to mean——

Mr. FULTON (interposing). Both.

Mr. JONES. Good faith.

Mr. FULTON. Plus.

Mr. JONES. It was intended to mean good faith. It says that.

Mr. FULTON. I was surprised at that. I have never seen such language in any other contract I have examined. Have you?

Mr. JONES. I have seen many contracts and written many contracts, and I think this is a good contract. I think it protects the Government in every respect.

Mr. FULTON. Well, now, in case they don't exercise good faith. It says:

* * * or that degree of care which they normally exercise in the conduct of Alcoa's business.

Why wouldn't that have said as do most contracts "reasonable care."

Mr. JONES. That is technical.

Mr. FULTON. No; because reasonable care and that degree of care that they exercise in their own business might be two entirely different things.

Mr. JONES. I think you could take the contract as a whole and read it, and not pick out the particular language here and there, and you would find that you have a contract that protects the Government in every way.

Mr. FULTON. Mr. Jones, one of the reasons we were interested in that, taking it as a whole, is that I note that you received a letter from the Secretary of the Interior, stating flatly, and I quote:

I do not believe this contract should be signed.

Mr. JONES. Yes.

Mr. FULTON. And stating his reasons therefor, as being that——

The terms of the proposed lease relating to operation do not square with the expressed policy of the President, or with the interests of the United States. The provisions restricting production and operation of the plants, relinquishing any substantial control over price, disposing of the alumina output, denying the Government any substantial control over costs of materials supplied by Alcoa itself, and depriving the Government of adequate accounting protection, seem to me to be contrary to the principles for which this administration stands. While this contract may protect the Defense Plant Corporation through its share of Alcoa's profits, it also helps maintain Alcoa's control of aluminum production and prices.

The Defense Plant Corporation thus obtains that protection at the expense of the departments of the Government consuming the product and the consuming public generally.

In addition, the provisions for direct and indirect compensation of Alcoa raise a serious question in my mind.

And I note that he suggests that if the contract has to be signed, that it be divided into a construction contract and then take more time to determine the provisions as to operation.

Did you consider the arguments that he was making in this letter of his, dated August 15?

Mr. JONES. I did.

Mr. FULTON. And did you examine the contract for the purpose of seeing whether it did, in effect, have the defects mentioned by him in this letter?

Mr. JONES. I examined it many times, and I do not agree with the Secretary in any construction that he placed on it. It is my responsibility and that of the R. F. C. to make the contract, and not his responsibility. We have made a contract which we think is a good contract.

Mr. FULTON. Well, do you consider this contract as drawn constitutes an obligation on the part of Alcoa to do any particular things?

Mr. JONES. Yes, sir.

Mr. FULTON. And it was your assumption that despite the language with which it is phrased, that they were so obligated.

Mr. JONES. What?

Mr. FULTON. It was your assumption that there was a concrete obligation on their part to do various things?

Mr. JONES. Alcoa?

Mr. FULTON. Yes.

Mr. JONES. Yes, sir.

Mr. FULTON. Because as I read this contract, it appears difficult to find an obligation on their part actually to construct the plants and operate them.

Taking up paragraph—

Mr. JONES (interposing). You stated what?

Mr. FULTON. I find it difficult in this contract to find any obligation on the part of Alcoa or any remedy on the part of the Government, in the event that Alcoa does not comply with the understanding that you had with them. It seems quite a one-sided contract.

Mr. JONES. If it is one sided, it is in favor of the Government.

Mr. FULTON. Who drafted the contract in the first instance?

Mr. JONES. Mr. Cliff Durr, our general counsel.

Mr. FULTON. He made the first draft?

Mr. JONES. I assume. I don't know.

Mr. FULTON. Mr. Durr, did you make the first draft?

Mr. DURR.¹ The first draft was prepared by Mr. Ewing.

Mr. FULTON. Who was the attorney for whom?

Mr. DURR. For Alcoa.

Mr. FULTON. So that they prepared the first draft and presented it to the Defense Plant Corporation?

Mr. DURR. The first draft of the contract.

Mr. JONES. The first time I saw it, it came from Mr. Durr. It doesn't make any difference.

Mr. FULTON. From examining the draft, it appears to come from Alcoa.

Mr. JONES. That is perfectly all right.

Mr. FULTON. Now, take the obligation to construct plants, I think that is set forth in paragraphs 1, 2, and 3, and 4. Do you find in there, Mr. Jones, any obligation on the part of Alcoa to finish those plants at any time that is specified in the contract?

Mr. JONES. I find the contract contemplates the construction and operation of these plants.

Mr. FULTON. At what time?

Mr. JONES. As rapidly as possible.

Mr. FULTON. Does it say that?

¹ Clifford J. Durr, general counsel, Defense Plant Corporation.

Mr. JONES. Yes; the contract says "as soon as practicable."

Mr. FULTON. As I read it, paragraph 1 says simply that they agree to use their best endeavors to acquire land.

Mr. JONES. I don't agree with you.

Mr. FULTON. Well, I am quoting there; am I not?

Mr. JONES. Well, as you read it—I mean I don't agree with your construction. You can place whatever construction you want on the contract. I don't agree with the construction that you indicate that you put on it.

Mr. FULTON. But at least there isn't anywhere in this contract any time limit at all within which those plants have to be built.

Mr. JONES. I think it is contemplated that they are to be built as rapidly as they can be.

Mr. FULTON. But I have read the contract several times, and I find in it no reference even to an estimated date of completion, except that by analyzing two sentences in paragraph 10 it would appear that legally they have an argument that 2 years would not be an undue amount of time, because you say in there that—

In the case of each plant the lease thereof shall expire at midnight 5 years from the date when such plant begins operations at 80 percent of its designed capacity, or 7 years from the date of execution of this agreement, whichever is earlier—

by which, as a lawyer, I would assume that the parties understood that it might take more than 2 years to get these plants into 80-percent operation.

Mr. JONES. I don't think so.

Mr. FULTON. At least that is the term of the contract; is it not?

Mr. JONES. Well, the contract speaks for itself.

Mr. FULTON. Well, Mr. Jones, did they give you any estimate as to when they were going to get this done?

Mr. JONES. Yes; my recollection is they expect to get the plants finished and in operation in less than a year.

Mr. FULTON. Why wasn't that put into the contract with a penalty for not getting it done?

Mr. JONES. The contract is a good-faith contract by both parties, and it didn't occur to us that we had to put it in there. It wasn't contemplated the plants must be completed in any specified time. They are to be constructed as quickly as the necessary materials are available.

Mr. FULTON. But if they don't get it done and don't exercise good faith there is nothing in the contract to provide for anything happening to them; is there?

Mr. JONES. I don't know that there is, but something would.

Mr. FULTON. What?

Mr. JONES. We would go ahead and build other plants.

Mr. FULTON. But you would still be obligated under this contract to the extent of \$52,000,000 to Alcoa.

Mr. JONES. I would like to have another \$52,000,000 contract with them.

Mr. FULTON. You have \$50,000,000 in an advance payment in the Aluminum Co. of America; have you not?

Mr. JONES. No; to the Aluminum Co. of Canada, and I would like to have still more contracts similar to the one we are discussing. We should make more contracts than this.

DEFENSE PLANT CORPORATION AGREEMENT WITH REYNOLDS METALS CO.

Mr. FULTON. Have you made contracts with anybody else in the United States other than the Aluminum Co.?

Mr. JONES. I think we are in agreement; yes, we have entered a contract with the Reynolds Metals Co.

Mr. FULTON. And there is a contract signed with that company?

Mr. JONES. Yes.

Mr. FULTON. When was it signed?

Mr. JONES. Oh, I think some time ago. I can't give you the date.

Mr. FULTON. Because I tried to find one last week and was informed there was none.

Mr. JONES. Maybe you didn't look at the right place.

Mr. FULTON. We wouldn't know where to look. We simply asked your office.

Mr. JONES. I think you know where to look.

Mr. FULTON. In any event, we were informed late last week there was no such contract.

Mr. JONES. We have a contract with the Reynolds Metals. Mr. Husbands, you also made a contract with Olin, haven't you?

Mr. HUSBANDS. We haven't signed it yet.

Mr. JONES. But you have agreed upon a contract?

Mr. HUSBANDS. Yes; we have made an agreement.

Mr. FULTON. As I understand, the first conference with the Olin Corporation was last Tuesday; was it not?

Mr. JONES. I don't know.

Mr. FULTON. We checked to find any record of any conferences, and we noted that up until Tuesday of last week nobody except Reynolds or Alcoa had even had a conference. I wondered if that checked with your recollection.

Mr. JONES. We have been discussing aluminum and these various contracts for a good many weeks.

Mr. FULTON. With which one of those people?

Mr. JONES. We don't spend our time writing down what we have been talking about. We first try to make a trade and then write a contract.

Mr. FULTON. But is your recollection that you talked with anyone other than Alcoa and Reynolds before Tuesday of last week?

Mr. JONES. I don't think I have talked with anyone else at all. I think Mr. Husbands, however, talked to Olin representatives on yesterday.

I have talked with Mr. Knudsen about the different contractors from time to time.

Acting Chairman MEAD. Mr. Jones, could there be a misunderstanding between you and Mr. Fulton with reference to the contract with Reynolds? He might be assuming that it is a contract similar to this and you might be assuming that it is a part of mortgage loan.

Is the Reynolds contract a contract similar to this, or is it an R. F. C. loan to build a plant?

Mr. JONES. Well, that turned out to be a loan to build a plant, one at Bonneville—or is that Longview?

Mr. HUSBANDS. Longview, Wash.

Mr. JONES. At Longview, Wash.; the plant is now under construction and just about finished. The plant in Alabama is finished and now making aluminum.

Mr. FULTON. You mean the contract of last year, then, with respect to a different program for aluminum.

Mr. JONES. And we are in substantial agreement with them on another plant of 60,000,000 pounds capacity for Alabama.

Acting Chairman MEAD. The Reynolds Co.?

Mr. JONES. The Reynolds Metal Co.

Acting Chairman MEAD. Are these contracts similar to Alcoa's, or are they outright R. F. C. loans, supported by collateral?

Mr. JONES. That hasn't been definitely decided. That may be a loan; it may be a contract.

Acting Chairman MEAD. But those already consummated are more or less loans; aren't they?

Mr. JONES. Right.

Acting Chairman MEAD. Yes.

Mr. FULTON. That one which was consummated was not a part of this program. That one which you refer to as consummated was not part of this 600,000,000 pounds of aluminum which was recommended by the O. P. M. this summer, was it?

Mr. JONES. Probably not.

Mr. FULTON. It had to do with the one which was executed last fall.

Mr. JONES. Probably.

Mr. FULTON. Then I did misunderstand, because I meant to ask whether the Reynolds Co. had any contract.

Mr. JONES. Whether what?

Mr. FULTON. Whether the Reynolds Co. had any contract for its part of the 600,000,000 pounds that has been currently recommended by the O. P. M.

Mr. JONES. We are in substantial agreement with them.

Mr. FULTON. But have not yet entered into a contract.

Mr. JONES. We haven't signed the contract.

Mr. FULTON. Does that contract provide for a Defense Plant Corporation owned plant, similar to these Alcoa plants?

Mr. JONES. That has not been definitely decided.

Mr. FULTON. And have you been willing to give them that type of plant if they want it?

Mr. JONES. Certainly.

Mr. FULTON. On the same type of terms that you have for Alcoa here?

Mr. JONES. Certainly.

PROVISIONS OF DEFENSE PLANT CORPORATION CONTRACT WITH ALCOA

Mr. FULTON. Now I note, in paragraph 12 of that, you have retained a right to furnish as much of the bauxite requirements as you need for the alumina plants of the Alcoa which are built with Defense Corporation money.

Mr. JONES. You mean the Government may do it?

Mr. FULTON. Yes; but it can do so only at prices agreed upon by Alcoa.

Mr. JONES. Yes; correct.

Mr. FULTON. Doesn't that mean that unless we agree, we can't even furnish our own bauxite to our own plant?

Mr. JONES. They will agree.

Mr. FULTON. But suppose they don't?

Mr. JONES. They will.

Mr. FULTON. What if they don't?

Mr. JONES. But they will agree.

Mr. FULTON. Well, the contract provides that if they don't agree, there will be a conference between yourself and Mr. Davis.

Mr. JONES. And then if we can't agree, a third man decides.

Mr. FULTON. But it is a third man acceptable to Alcoa.

Mr. JONES. And to the Defense Plant Corporation.

Mr. FULTON. Suppose you don't agree on that third man, what happens under this contract?

Mr. JONES. I can't foresee such a situation.

Mr. FULTON. In any event, there is no provision whatever in the contract to take care of it.

Mr. JONES. I regard that contract as a good contract, an ordinary contract. There is nothing wrong with the contract whatever. I don't think you can read anything into the contract that is bad, hard as you may try.

Mr. FULTON. All contracts, as I understand it, are written on the assuming or giving of certain rights and also specifying certain duties, and in that case, this contract doesn't provide what will happen in case one party does not agree to accept the bauxite. I don't quite see, under this contract, what you could do about it; do you, Mr. Jones?

Mr. JONES. I do.

Mr. FULTON. What could you do?

Mr. JONES. Whatever seemed appropriate or necessary at the time.

Mr. FULTON. You could violate the contract, but what else could you do, other than to allow them to go ahead without your bauxite?

Mr. JONES. We can do whatever is necessary. We can do it at the time.

Mr. FULTON. How would you get your bauxite into these alumina plants that you would have paid for?

Mr. JONES. That is a moot question, because we haven't any bauxite.

Mr. FULTON. Mr. Bunker told us he was hoping to have some.

Mr. JONES. We haven't any. I don't know where we are going to get any.

Mr. FULTON. In any event, if they wouldn't take it, you couldn't make them take it under this contract.

Mr. JONES. I think we could; yes.

Mr. FULTON. Under what provision?

Mr. JONES. Under that contract.

Mr. FULTON. Is there any provision in here that so states? I haven't been able to find one.

Mr. Durr is the attorney who prepared and worked on this contract. Do you know of any provision which provides for that contingency?

Mr. DURR. In the event——

Mr. FULTON. In the event Alcoa refuses to accept bauxite because it is unwilling to agree that the price is fair and is unwilling to agree with Mr. Jones.

Mr. DURR. If Mr. Jones and Mr. Davis are unable to agree on a third party, there is no provision beyond that.

Mr. FULTON. In other words, at that point we would have to proceed without the Government bauxite if we then owned it?

Mr. DURR. You would have a stalemate. Theoretically, you would have a stalemate if they couldn't agree on a third party.

Mr. FULTON. And that is true of every other provision in the contract, isn't it, except for two or three cases where there is an express provision to the contrary?

Mr. DURR. That is true of everything that is left for future negotiation.

Mr. FULTON. Mr. Jones, under this contract, can the Government even operate or cause to be operated the aluminum plants, unless the Alcoa is willing to have them operated?

Mr. JONES. I think we could.

Mr. FULTON. Would you look at paragraph 13 of the contract, because I note there that Alcoa only agrees that "when the alumina plant is completed, production of alumina therein shall be at such rates within its capacity and for such periods as shall be agreed upon from time to time by Defense Corporation and Alcoa."

Suppose Alcoa tells you it doesn't agree that that plant should be operated, even though you have a good many millions of Government money in it? I don't quite see, under this contract, how you could require it to be operated.

Mr. JONES. I suspect we could if we were to try.

Mr. FULTON. Under what provision of the contract?

Mr. JONES. You can do it without a contract.

Mr. FULTON. In other words, you would take it away from them, even though it is leased to them and operated?

Mr. JONES. I think we could, if necessary.

Mr. FULTON. But you would have to do that by statutory authority of the Government.

Mr. JONES. I am not afraid that the Government is going to be imposed upon under this contract.

Mr. FULTON. And you would be liable for damages to Alcoa, would you not, for violating its contract?

Mr. JONES. I wouldn't think there would be any damages.

Mr. FULTON. Why sign a contract where they have a right such as that, Mr. Jones, when you have no right to control and operate the plant? Why not insert a provision authorizing you to operate the plant if they don't want to?

Mr. JONES. I think we are fully protected in the contract and authorized to do anything that should be done under it.

Mr. FULTON. But I see no provision and I don't believe you can find one in that contract, authorizing you even to operate your own plant without their consent.

Mr. JONES. I think we can.

Mr. FULTON. Under what provision, Mr. Jones?

Mr. JONES. Under the general purposes and intent of the contract.

Mr. FULTON. Would they, in your opinion, make it the express language of the contract?

Mr. JONES. What?

Mr. FULTON. Is it your opinion that the express language of the contract or of any contract can be negated by showing an intention the other way between the parties who sign it?

Mr. JONES. As long as you quote your authority and interpret the contracts to suit them.

Mr. FULTON. As I understand the law, you don't look at the purpose or intent of a party until you look at the contract and find what it says. If it is express and explicit and unambiguous, you don't look at the intent of the parties. Isn't that your understanding, Mr. Durr?

Mr. DURR. We consider the circumstances surrounding it. If there is no ambiguity, the contract is supposed to govern.

Senator BREWSTER. Excuse me. I have to leave, and there is one question I would like to ask.

The thing that interested me, Mr. Jones, was in your initial statement regarding the discussion with Mr. Ickes, as I have always been very much concerned about coordinated control of our production, and your reply looked in the direction of there being at least two agencies, if not more, that were concerned with solving this aluminum problem. Is that the situation?

Mr. JONES. Two agencies.

Senator BREWSTER. Now, Mr. Ickes, of course, has been somewhat concerned with production at some of his power plants.

Mr. JONES. The only way he is interested in this contract is in furnishing the power. This contract provides for 340,000,000 pounds of aluminum, 400,000,000 pounds of alumina, and Mr. Ickes is required, if the plant is built in the vicinity of Longview or in the vicinity of Bonneville, to furnish power for 90,000,000 pounds. If he doesn't choose to furnish it, then we will build the plant somewhere else.

Senator BREWSTER. Just what are the arrangements as between your agency and the Secretary of the Interior and the O. P. M.? How do they relate to each other in determining what shall be done?

Mr. JONES. We are merely a service agency of the O. P. M. The War Department requests us to make a contract with Alcoa for this amount of aluminum, and they locate the plants. We have nothing to do with such location. We negotiate and enter into the contract. The Secretary of the Interior is involved only because power may be needed in the Northwest district. He is finding "buggers" in the contract with do not exist.

Senator BREWSTER. So far as determining how much aluminum is required, you look entirely to the War Department?

Mr. JONES. To O. P. M. and the War Department.

Senator BREWSTER. And O. P. M. What about the Navy?

Mr. JONES. Well, O. P. M. includes War and Navy. We do not locate plants; we do not say what materials or what quantities shall be produced. We are asked to build the plants, to contract with this, that, or the other company.

In the instance we are discussing they asked us to contract with Alcoa for this 340,000,000 pounds, with the Olin Corporation for 30,-

000,000—that plant is to be located at Tacoma—and two other corporations that are not now making aluminum. I don't know where those are to be located—one, I think, at Spokane, and one at Los Angeles. These are people who are not now manufacturing aluminum. It has been my understanding that they are not particularly interested in building plants and making aluminum, but they are willing to serve the Government if the Government wants them to—and the Government wants them to in order that we will have more than one or two people making aluminum, so that there will no longer be any question of a monopoly on aluminum.

Senator WALLGREN. Along that line you have approached certain companies and requested that they go into the manufacturing of aluminum, have you not?

Mr. JONES. Yes.

Senator WALLGREN. And they have turned the proposition down?

Mr. JONES. Well, I don't know that they have turned it down, but it is not unnatural that a manufacturer would not want to enter a new field at this time.

Senator WALLGREN. Did you approach the Union Carbide & Carbon Co. with the matter of a plant?

Mr. JONES. Have we done that?

Mr. HUSBANDS. They haven't approached us yet.

Mr. JONES. They were nominated; yes, sir.

Mr. HUSBANDS. O. P. M. nominated them, but they haven't approached us.

Senator WALLGREN. No expression from them whatever?

Mr. JONES. Directly; none, but we will, in the nature of things, follow through on every one of the suggestions of O. P. M. As I say, we are in agreement with Olin.

Senator WALLGREN. All these people have to use bauxite in the manufacture of alumina. Is that correct?

Mr. FULTON. Senator Wallgren, none of those people would make alumina under these contracts. These are all aluminum contracts, except for O. P. M.

Mr. JONES. I assume they would have to buy the alumina.

Senator BREWSTER. Couldn't there be some degree of comity that could be developed between these Government agencies, so that there would be no question of conflict of authority? Mr. Ickes apparently assumes that he has some responsibility in this connection, or I don't think he would have written such a letter.

Mr. JONES. I don't understand that he assumes that. I think his point is that he does not want to be required to furnish power, public-owned power, on a contract that, in his opinion, is unfair to the Government. I believe that is a correct statement of his position.

Senator BREWSTER. Does he have the authority to withhold that, in his judgment?

Mr. JONES. Oh, yes; somebody would.

Senator BREWSTER. You mean that you would have a plant here without any power?

Mr. JONES. That particular 90,000,000 pounds could be located elsewhere, or the contract could be adjusted to suit Mr. Ickes, one or the other.

Senator BREWSTER. Modified to suit whatever stipulations he might make?

Mr. JONES. That is correct.

Senator BREWSTER. But you feel that as far as the Government is concerned, it is completely protected in this contract?

Mr. JONES. I do.

Senator BREWSTER. That is all.

Mr. JONES. Were you asking a question about bauxite? You had something else in mind.

Senator WALLGREN. That has already been answered. I see it now.

Mr. JONES. I might say along this line that we understand informally that O. P. M. wants us to contract with Alcoa for additional alumina production in Arkansas of 600,000,000 pounds. That hasn't come through yet, but we know it is on the way.

Senator BREWSTER. How long ago were you asked to get the additional facilities?

Mr. JONES. Some weeks.

Senator BREWSTER. Well, does that mean three or six?

Mr. JONES. Four, five, or six. I don't remember.

Senator BREWSTER. You know, there has been quite a little concern about the failure to anticipate these requirements. It wasn't brought to your attention until comparatively recently?

Mr. JONES. Some weeks ago. We work as fast as we can. It takes a good deal of time to negotiate a contract——

Senator BREWSTER (interposing). I quite understand that.

Mr. JONES. Of this type. I suppose we were 3 weeks negotiating this contract with Alcoa.

Senator BREWSTER. I can understand that.

Mr. JONES. It didn't take long on the Olin contract. That is a small one and a simple problem. We are negotiating contracts all the time, and we do it as rapidly as good business warrants.

Senator BREWSTER. Well, I didn't mean to reflect on the speed with which you had operated.

Mr. JONES. I understand.

Senator BREWSTER. But I asked in order to fix the time, because we did find some weeks ago that there seemed to be a very considerable——

Mr. FULTON (interposing). Four months ago.

Senator BREWSTER. We found that there was apparently a very great shortage, and we wanted to establish where the responsibility was for failing to anticipate that. It wouldn't entirely rest upon you.

Mr. JONES. I understand that the production of aluminum in the past 5 months has very substantially exceeded the demand and the consumption.

Senator BREWSTER. They are not building up reserves which will anticipate the requirements that we have in prospect for this next year, are they?

Mr. JONES. Substantial reserves are being built up now, and it is hoped that we will get these plants working so that there will be no delay in the aluminum necessary. It took about 6 months to build the Reynolds plant in Alabama. At least I believe that plant was making aluminum in 6 months. I think it took less than 6 months for

them to build the plant at Longview, Wash., and they will be making aluminum there in a very few days. It is my information that the Aluminum Co. has ordered the machinery for the plants which they are to build. There will be no delay there. I don't think much time is being lost—that there has been serious delay. But that is all just general information.

Senator BREWSTER. We had quite extensive evidence on that matter here some months ago.

Mr. JONES. The information which I have given you is the advice that I have relied upon.

Senator BREWSTER. I am sorry, Mr. Chairman. I must be excused. I have an appointment downtown.

Mr. FULTON. Well, Mr. Jones, in that same paragraph 13, it is provided that when the Government wants to use alumina produced in the Government's own alumina plant, in making aluminum in the Government's own aluminum plants, it can't do it except at prices which again must be agreed upon by Alcoa as well as the Defense Corporation.

Mr. JONES. We don't know what it would cost to produce it. We can't write exactly the number of cents a pound because we can't anticipate all of the costs.

Mr. FULTON. You could, however, prepare a formula to determine.

Mr. JONES. I think we have a formula.

Mr. FULTON. I don't find it in this contract.

Mr. JONES. I think it is.

Mr. FULTON. Do you know of any such, Mr. Durr?

Mr. JONES. There is a formula in there which provides that anything that has to be determined in the future will be determined by the Federal Loan Administrator, whoever he may be, and by the chief executive officer of Alcoa, whoever he may be, and if they cannot agree, they shall select and agree upon another man, and that man shall make the decision.

Mr. FULTON. But in the event that Alcoa does not agree, either with you or with the man you select or suggest be selected, there isn't any provision in here which would permit the Government to use its own alumina in its own aluminum plants, is there?

Mr. JONES. I don't agree to that at all.

Mr. FULTON. What provision would permit us to use it?

Mr. JONES. That is a statement by you to cast reflection on the contract.

Mr. FULTON. Well, Mr. Jones, I am only quoting the contract, and it says that it can be delivered at prices which shall be agreed upon by Alcoa.

Mr. JONES. I made my statement, and I stand by it.

Mr. FULTON. But you think that they could be compelled to use our alumina, even despite the contract's expressed terms?

Mr. JONES. I haven't any fear in the world that there will be any difficulty under this contract.

Mr. FULTON. Well, now, in the event that we have some spare, excess, alumina—

Mr. JONES. What?

Mr. FULTON. In the event that we don't use all of the alumina we produce in the Government's alumina plant, and we don't need

it for the Government-owned aluminum plants, can the Government sell that alumina without the consent of Alcoa?

Mr. JONES. I think that the Government can do anything it wants to do under the contract.

Mr. FULTON. But the contract provides that the remainder of such alumina shall be disposed of in such manner as the Defense Corporation may direct, at prices to be agreed upon from time to time by Defense Corporation and Alcoa.

Mr. JONES. All right.

Mr. FULTON. And there is no provision anywhere in the contract to provide that you can sell it, if they don't agree on the price, is there?

Mr. JONES. But everything, where agreement is not reached, shall be settled by arbitration as indicated.

Mr. FULTON. And if it can't be arbitrated, then how would it be settled, if they won't arbitrate?

Mr. JONES. I don't anticipate that.

Mr. FULTON. The contract doesn't either, does it, Mr. Jones?

Mr. JONES. The contract doesn't contemplate any of the trouble that you seem to read into it.

Mr. FULTON. And in the same paragraph, however, there is a different way of handling the question when it comes to pricing the aluminum ingot, and there it provides that, in effect, any price that Alcoa sets is perfectly all right and cannot be objected to unless the Defense Corporation makes a finding based on this formula, that the prices and the profits are resulting in unreasonable profits, isn't that correct?

Mr. JONES. Isn't that pretty good?

Mr. FULTON. It all depends on that formula, Mr. Jones, and just how good the formula is, doesn't it?

Mr. JONES. No; it depends upon the administration of this contract.

Mr. FULTON. That depends, in turn, because you can't find out what the price is for bauxite until the Aluminum Co. agrees with you on the price. You can't find out what the price for alumina is until the Aluminum Co. agrees with you on that price, and until you know those two things, you can't even begin to find out whether the profit is reasonable or unreasonable, can you?

Mr. JONES. I don't agree with you.

Mr. FULTON. How would you begin to find out that the profit was unreasonable?

Mr. JONES. I couldn't explain it to your satisfaction.

Mr. FULTON. Is there anything in this contract that indicates how you would go about finding that?

Mr. JONES. I don't know whether there is or not, but I could find out about it.

Mr. FULTON. Do you, Mr. Durr, know of any provision in this contract that would enable you to determine whether the profit was reasonable or unreasonable until you knew the price and cost of the ingredients?

Mr. DURR. This provision says that that shall be in the Defense Plant Corporation's final determination.

Mr. FULTON. Yes.

Mr. DURR. The burden would be on Alcoa. The Defense Plant Corporation can make its own finding based on such evidence as it can

get at the time, and I don't think that you could go behind the Defense Plant Corporation's finding on the price.

Mr. FULTON. How would they make a finding on a price that didn't exist?

Mr. DURR. The price will exist at the time.

Mr. FULTON. Not if there is not an agreement on it, it won't.

Mr. DURR. You mean on the sale of ingot aluminum?

Mr. FULTON. Bauxite or aluminum.

Mr. DURR. This relates to the sale of aluminum.

Mr. FULTON. But you can't find out what the profit on the sale of aluminum is until you know the cost of the materials that are inherent in the production of aluminum.

Mr. DURR. That is correct.

Mr. FULTON. And those cannot be determined under this contract except by agreement with Alcoa.

Mr. DURR. No; the cost is not a question to be determined by agreement. The cost is something that as a matter of fact exists at the time.

Mr. FULTON. Now, this fair profit, or unreasonable profit that is referred to in here, is to be determined in accordance with the appendix to the contract, is it not, Mr. Jones?

Mr. JONES. I don't think so, necessarily.

Mr. FULTON. Well, what other part of the contract would it be determined by?

Mr. JONES. Whatever we regard as a reasonable or unreasonable profit.

Mr. FULTON. Could you disregard, in your opinion, the appendix?

Mr. JONES. I don't think we need anything to decide that.

Mr. FULTON. But the appendix has some specified material with respect to that. Would you think we could disregard that?

Mr. JONES. I don't think we need a contract, or anything else, to say whether it is a fair profit.

Mr. FULTON. Well, when you do have a contract, you must abide by it, must you not?

Mr. JONES. Yes; try to.

Mr. FULTON. Well, now, this appendix provides in article 4 thereof that in addition to all the expenditures that Alcoa has had, you will give consideration to items of overhead. Do you recall that?

Mr. JONES. Yes; I do.

Mr. FULTON. And you proceed to provide that up to a fourth of a cent a pound, which based on the quantities involved here of aluminum and alumina in this contract and in the 600,000,000 that you referred to as being pending, would be about \$2,000,000, a quarter of a cent a pound would be two-million-and-some-odd dollars on the basis of that schedule as set forth here, would it not?

Mr. JONES. Did you ask a question?

Mr. FULTON. Yes; I wondered whether you had considered that it would amount to as much as \$2,000,000.

Mr. JONES. I hadn't considered it as to dollars. That would depend upon how much material is manufactured and sold.

Mr. FULTON. Well, taking the basis of 2 pounds of alumina to be considered as 1 pound of aluminum, you would have for a billion pounds of alumina 500,000,000 pounds of aluminum, treated as though it were 500,000,000 pounds of aluminum, isn't that correct?

Mr. JONES. Well, you are testifying now.

Mr. FULTON. Now, Mr. Jones, would you look at page 3 of the appendix and tell me if it doesn't say that in this calculation, you treat 2 pounds of alumina as 1 of aluminum?¹

Mr. JONES. What page are you on?

Mr. FULTON. Page 3 of the appendix.

Mr. JONES. My understanding is that it takes 2 pounds of alumina to make a pound of aluminum.

Mr. FULTON. Yes; and also in these overhead calculations that the appendix provides that 2 pounds of alumina shall be considered the same as 1 pound of aluminum.

Mr. JONES. That is not intended to be cumulative.

Mr. FULTON. Oh, you mean you wouldn't get it on both the alumina and the aluminum. And you would get it in the alumina only if you didn't produce aluminum.

Mr. JONES. You would get it on aluminum, the finished product of alumina, I suppose.

Mr. FULTON. Well, the contract, at best, doesn't seem clear that you wouldn't get it on both, because it has no statement in here that it was to be considered noncumulative.

Mr. JONES. It was not intended to be cumulative.

Mr. FULTON. Then you wouldn't add both together.

Mr. JONES. No.

Mr. FULTON. Taking the billion pounds of alumina then, you would have, for a quarter of a cent, the equivalent of a quarter of a cent on 500,000,000 pounds of aluminum, or a total of \$1,250,000.

Mr. JONES. We have made a contract for but 400,000,000 pounds of alumina.

Mr. FULTON. And you intend to make a different type of contract for the other 600?

Mr. JONES. No; I haven't discussed it. It hasn't come to us definitely. When it does, we will take it up.

Mr. FULTON. Then, taking the 400,000,000 pounds that you have made a contract on, that being treated as 200,000,000, being taken as a quarter of a cent on that would be an allowance of \$500,000 for the alumina in this contract.

Mr. JONES. I haven't made the calculations.

Mr. FULTON. And then taking the 340,000,000 pounds of aluminum, remembering, of course, that we have to make sure not to make any double calculation, that would be the same as 170,000,000 pounds of alumina, or some \$425,000 for that figure.

The contract provides, with respect to that, that any expenditures for overhead—and this over and above their expenditures for materials and labor and for construction—

Mr. JONES (interposing). That is right.

Mr. FULTON. Which can be accurately and readily distinguished as having been specifically expended in connection with the operation of the leased plants, whether expended by salesmen, buyers, engineers, auditors, and so forth, for office rent, traveling, and so forth, even though part of the time of such employees and part of such facilities are also used in part in connection with Alcoa's own operations, or own overhead, shall be included in the operating expense of the leased plants.

Mr. JONES. A proper amount of it; yes.

¹ See *infra* p. 2291.

Mr. FULTON. And up to this quarter of a cent maximum, they could include any of those——

Mr. JONES (interposing). Expenses, properly chargeable to this contract.

Mr. FULTON. In other words, they could include—no. It is the overhead.

Mr. JONES. I am talking about overhead.

Mr. FULTON. They could include the part of their rent for office building in Pittsburgh, for instance.

Mr. JONES. You have overhead with these plants, as with any other plants.

Mr. FULTON. But they could include part of the rent for their Pittsburgh main office.

Mr. JONES. That is properly chargeable, I assume.

Mr. FULTON. And part of their engineering expense for such things as improvements in the aluminum process.

Mr. JONES. I should think so.

Mr. FULTON. Well, now, that provision takes care of the overhead in part, at least, but I note that you have still another one saying that in order to compensate Alcoa for such portion of its overhead as cannot thus be specifically allocated to the operation of the leased plants, Alcoa may also include, as an item of operating expense, the sum of one-half cent per pound of aluminum produced in the leased plants.

Now, they don't have to account for that one at all, do they?

Mr. JONES. That is overhead. It can't be designated as your time might be designated if you were working for the company in one of these plants.

Mr. FULTON. Well, my time, if I were working for the company, would already be charged in.

Mr. JONES. What?

Mr. FULTON. My time would already have been charged in, in the cost of production, and if they missed it, it would have been in that overhead item we just discussed.

Mr. JONES. It would be in the amount not over a quarter of a cent.

Mr. FULTON. This is something else for which they don't have to account, isn't that true, Mr. Jones?

Mr. JONES. I assume that is for the general officers, the general overhead, the general administrative expenses, such items as would properly be included.

Mr. FULTON. But there is no way that they can be compelled to show you that there is any such expense.

Mr. JONES. What?

Mr. FULTON. Under this contract, they don't have to account at all for this. This is just extra over the overhead that we referred to.

Mr. JONES. That is compensation to these executives.

Mr. FULTON. And in the case of a billion—pardon me.

Mr. JONES. On what?

Mr. FULTON. In the case of a billion pounds of alumina, which you have discussed, if you had this provision in, that alumina alone would give them $2\frac{1}{2}$ million each year.

Mr. JONES. How is that?

MR. FULTON. Well, the computation of a half cent times the 500,000,-000 pounds, treating each pound of alumina as half a pound of aluminum, would give you $2\frac{1}{2}$ million dollars a year for each year of the leased period, would it not?

MR. JONES. Well, you are making the calculations.

MR. FULTON. Well, it was rather surprising when we multiplied it out. But taking a thousand million pounds of alumina and treating each pound as though it were a half pound of aluminum, as provided in this contract, you reach 500,000,000 pounds, do you not?

MR. JONES. I wasn't following you.

MR. FULTON. Well, half of a billion is 500,000,000, isn't it?

MR. JONES. It was when I went to school.

MR. FULTON. And then a half cent on each of 500,000,000 amounts to $2\frac{1}{2}$ million dollars, does it not?

MR. JONES. What?

MR. FULTON. Half a cent on 500,000,000 amounts to $2\frac{1}{2}$ million dollars, doesn't it?

MR. JONES. Half of 500,000,000 is $2\frac{1}{2}$ million.

MR. FULTON. No; a half a cent.

MR. JONES. I didn't say so.

MR. FULTON. Yes; it would be $2\frac{1}{2}$ million dollars.

MR. JONES. A half of 500,000,000 is 250,000,000.

MR. FULTON. And 250,000,000 cents would be $2\frac{1}{2}$ million dollars.

MR. JONES. Yes.

MR. FULTON. And that would go on for each year of this leased agreement, would it not?

MR. JONES. I assume.

MR. FULTON. And that is over and above and in addition to a provision that they shall be allowed 15 percent of the profits of operating the plants.

Now, in determining that 15 percent of the profits, you determined that in accordance with this formula set forth in the appendix, did you not?

MR. JONES. I assume.

MR. FULTON. And working out that formula, it appears that it amounts to a mixing of the aluminum produced by the Government-owned plants with the aluminum produced by the Aluminum Co.'s plants, and then taking a percentage to determine the theoretical gross income referred to, I think, as the theoretical gross income.

So that the gross income would be directly dependent upon the prices which in that earlier provision of the contract we noted the Aluminum Co. could, itself, set, and in the first instance has the absolute right to set without even talking with you about it. Unless you could show that those profits were unreasonably high, you wouldn't be able to have anything to do with the profit, or the price for the aluminum. Isn't that true?

MR. JONES. Well, it is a pretty long question.

MR. FULTON. The contract is pretty long, too.

MR. JONES. Yes.

MR. FULTON. And perhaps requires a little longer question than usual.

Now, I note that when you lose the plants, if, for example, you have a fire and lose the plant, the Aluminum Co. retains the absolute

right to require you to use those proceeds to rebuild the plant if it wants to. Do you recall that?

Mr. JONES. I don't.

Mr. FULTON. Would you look at paragraph 14 of the contract?

Mr. JONES. What does it say?

Mr. FULTON. Well, it says—

In the event of loss under any such policies, the proceeds may upon written request of Alcoa promptly be used for the repair, restoration, or replacement of the property damaged or destroyed, and to that end Defense Corporation shall promptly make available to Alcoa the insurance proceeds received by Defense Corporation.

So that means, does it not, that if it burns down, they can require you to rebuild even if by that time the war might be over and we might not want to rebuild?

Mr. JONES. Do you think they would want us to do it?

Mr. FULTON. I don't know what they might want to do, but if they did want you to do it, you would have to do it, wouldn't you?

Mr. JONES. We might and we might not.

Mr. FULTON. Well, how could you avoid doing it without violating the provisions of the contract?

Mr. JONES. We might require them to require us to do it.

Mr. FULTON. Not to require—

Mr. JONES. We might require them to require us to do it.

Mr. FULTON. I don't understand.

Mr. JONES. You understand the English language.

Mr. FULTON. I think so, and I still don't understand, Mr. Jones, how you could make them require you to do it if you didn't want to under this contract.

Mr. JONES. Suppose they undertook to make us do it.

Mr. FULTON. How could you avoid it without a breach of the contract?

Mr. JONES. Well, the contract is subject to construction.

Mr. FULTON. You would construe "shall" as meaning maybe?

Mr. JONES. We would hire a sharp lawyer like you to defend us.

Mr. FULTON. Thanks for the compliment, but I don't think I can make "shall" read "maybe." Maybe you would find one who could.

But now in the opposite event, we have first discussed what would happen if they wanted you to rebuild and you didn't; suppose you wanted to rebuild and they didn't, is there any provision in here that requires them to rebuild if they don't want to?

Mr. JONES. If they wouldn't, we would get somebody else. We wouldn't be dependent upon them.

Mr. FULTON. At least they are free from any obligation of having anything to do with it in this case?

Mr. JONES. I don't know.

Mr. FULTON. They are certainly free under this contract, aren't they?

Mr. JONES. Yes. I don't think they are particularly anxious to do this. The Government requested Alcoa to make this contract.

Mr. FULTON. Was that why these provisions were put in, in this case, because they said that they weren't interested and it was a take-it-or-leave-it proposition?

Mr. JONES. No; the contract, in my opinion, is an excellent contract from the Government's standpoint, and I think I know what

a good contract is. I also think and know that you can be employed on either side of the case and you can make just as good an argument on one side as you can on the other. You are a good lawyer and that is what lawyers are for, and that is what courts are for, to settle these things.

Mr. FULTON. Thanks for the compliment; I think you are inferring that I might be a good lawyer, but I don't think I could make the argument on the other side of the contract.

Mr. JONES. You could be employed to do it, like good lawyers are, I am sure.

Mr. FULTON. Mr. Durr is a good lawyer.

Mr. JONES. An excellent one.

Mr. FULTON. Can he construe this contract from the opposite side?

Mr. JONES. He does construe it as being a good contract for both sides.

Mr. FULTON. Mr. Durr, can you construe any provision in this contract as requiring the Aluminum Co. to rebuild when they don't want to?

Mr. DURR. We have the money under our control and we can rebuild or make such arrangements as we see fit. If the Aluminum Co. is interested in continuing the operation, they would rebuild; if not, we could get somebody else to rebuild.

Mr. FULTON. Suppose you don't want to rebuild, can you construe this contract in such a way so that you can refuse to make the proceeds available to Alcoa?

Mr. DURR. The Alcoa has a lease during a certain period of time and during the period of that lease they would be entitled to a complete plant if they need it, and I think it is fair to say the insurance proceeds can be used if the damage occurred during the period of the lease.

Mr. FULTON. So you agree with me a "shall" means "shall" in the contract?

Mr. DURR. I think it means "shall" there. I think the Aluminum Co. can request the insurance proceeds in order that they will have a plant to continue to operate for the life of the lease.

Mr. FULTON. Now, Mr. Jones, did you look at these provisions for an accounting in the contract to see whether you would be authorized to find out what was going on if you wanted to?

Mr. JONES. Yes, sir.

Mr. FULTON. Were you satisfied that under these provisions you are entitled to find out whatever you may want to find out about how your own plants are being operated?

Mr. JONES. Yes, sir.

Mr. FULTON. Well, I note in paragraph 18 there is a specific provision with respect to keeping accounts and records, but it also provides that when you want to find out the facts, "Alcoa will, when requested by Defense Corporation, have a certified public accountant acceptable to Defense Corporation and to Alcoa submit to Defense Corporation as soon as is convenient after the close of any year, a statement showing the variation between the average price paid for labor," and so forth.

Now it specifies certain particular individual matters as to which you can have such an accounting. Do you recall that?

Mr. JONES. I remember that; yes.

Mr. FULTON. But you can't have it except "as soon as is convenient after the close of any year."

Mr. JONES. Yes, sir.

Mr. FULTON. So you couldn't ask for it in the middle of the year and get it.

Mr. JONES. I suppose we could get it if we wanted to.

Mr. FULTON. If they didn't want to give it to you, you would have no right to it.

Mr. JONES. I don't think they would object. It would have to be a normal time to do it—soon after the close of the year, if possible.

Mr. FULTON. You couldn't have your own public accountant do it, you couldn't have your own selected accountant do it unless they agreed with you that he was the right kind of man that they wanted to have looking over their books, could you?

Mr. JONES. I don't think we will have any difficulty agreeing. We have named a number of accountants in the contract, any one of whom would be acceptable.

Mr. FULTON. In this contract?

Mr. JONES. I think so.

Mr. FULTON. I haven't found any list of accountants attached here, but I assume that is a separate negotiation that you have had.

Mr. JONES. I thought it was in there.

Mr. FULTON. I am afraid not. I haven't found it.

Mr. JONES. I might be mistaken. We named a number.

Mr. FULTON. In order to exclude the possibility that you might have the right to look at anything other than these specified matters at the end of a year when convenient by their accountant, it says at the end of that paragraph "that such certified public accountant shall also report to Defense Corporation with respect to any other facts deemed by both Defense Corporation and Alcoa important and pertinent to a comparison of the operations in the leased plants with the operations in the owned plants." That means you couldn't even ask for information on any other subject unless they agreed with you that it was in their opinion pertinent and important.

Mr. JONES. I wouldn't read it that way. I wouldn't interpret it in that way.

Mr. FULTON. Isn't that the ordinary interpretation that the court would give to this language, that by specifying one method you tend to exclude another?

Mr. JONES. I guess I wasn't thinking the way you were thinking when the contract was drawn.

Mr. FULTON. Well, I am thinking simply in accordance with the decisions of the courts as to the effect that a contract means what it says and that if it specifies that you can have it only under certain conditions, it means that you can't have it under any other conditions. Wouldn't that be the way you would construe a contract, Mr. Jones?

Mr. JONES. I negotiated a contract that I think is a fair contract and I don't have the slightest concern about its being carried out in good faith by both parties.

Mr. FULTON. In case there is an obligation in here and you find that Alcoa has not complied with it, the contract doesn't give you any right to cancel it if they cure it within 30 days, so even if you

catch them in an act of that kind, if they cure the violation within 30 days after notice in writing by you to them you can't cancel it.

Mr. JONES. Is that in the contract?

Mr. FULTON. That is in paragraph 22 to the effect that "Defense Corporation by notice in writing may cancel this agreement in the event (a) receiver or trustee in bankruptcy," etc., with which we are not now concerned, or "(b) any violation of any terms, conditions, covenants, of this agreement by Alcoa and the failure of Alcoa to cure such violation within 30 days from the giving of written notice thereof by Defense Corporation to Alcoa," so that the most you could do would be to say, "It is bad, you will have to cure it." Isn't that correct?

Mr. JONES. That would be enough, I think.

Mr. FULTON. Is there any provision in here enabling you to get any damages because of the violation?

Mr. JONES. I don't know. I don't think there would be any.

Mr. FULTON. And there isn't any, in fact, in the contract?

Mr. JONES. I don't know that there is.

Mr. FULTON. Do you, Mr. Durr, know of any provision as to damages?

Mr. DURR. Unless you include a provision for liquidated damages, I think if either party can show damages from violation of the contract, they would have a cause of action.

Mr. FULTON. So you think you could sue them, even though you don't have a provision?

Mr. DURR. I think that if we could show damages resulting from some violation which would be a breach of contract, we could sue for that.

Mr. FULTON. With respect to power, Mr. Jones, there is a particular escapement clause in here which enables them to escape any obligation they may have if they can't get a power contract suitable to them. Isn't that correct?

Mr. JONES. What about it?

Mr. FULTON. It means, then, that unless they get what they want, at the end of 90 days you might be told in effect that what you thought was a contract was nothing but a piece of paper. Isn't that correct?

Mr. JONES. I assume that is true.

Mr. FULTON. So that if they don't reach the arrangement that Mr. Ickes would think would be right, we probably will have to start over again with this type of contract.

Mr. JONES. Only as to that particular part.

Mr. FULTON. Yes; but it does, however, provide that in that case the Defense Corporation shall reimburse Alcoa for all of its expenses and shall hold it harmless—

Mr. JONES. That is correct.

Mr. FULTON. From all obligations therefor incurred by it in good faith.

Mr. JONES. That is correct.

Mr. FULTON. Now, in paragraph 25 there is another escapement clause which renders them free from any obligation whatever if they can't get essential materials or transportation or if they have a labor shortage or labor disputes—

Mr. JONES. That is right.

Mr. FULTON. Or fire or explosion, act of sabotage, or any cause beyond their control.

Mr. JONES. Yes, sir; that is correct.

Mr. FULTON. In other words, it is pretty hard to conceive of a situation where they wouldn't have one or the other of those as the reason or excuse for not delivering, isn't it?

Mr. JONES. They are agents for the Defense Plant to build these plants.

Mr. FULTON. And, in effect, within whatever time they find it possible to do so in view of any kind of interruption or reason that they could assign under this paragraph.

Mr. JONES. I think it is a good faith contract. I don't anticipate any of the things that you see in it.

Mr. FULTON. And then, finally, it provides that if you can't agree you will name a man, if you can agree on that man, whose decision shall be final.

Mr. JONES. Yes, sir.

Mr. FULTON. Well, when are they going to start building the plants? Did they tell you that?

Mr. JONES. I think they have already started on some of them.

Mr. FULTON. And the actual work of erection?

Mr. JONES. They have ordered the materials, some of them.

Senator BALL. Have they picked any of the sites?

Mr. JONES. I think the site at Massena, N. Y., has been picked. I am not certain about Arkansas. I believe the site for the Northwest plant has been picked.

Senator BALL. Are they picked entirely by Alcoa or does the Defense Plant Corporation approve them?

Mr. JONES. They submit proposed sites to Defense Plant for approval.

Senator BALL. You have to approve them?

Mr. JONES. They submit all the plans and specifications for approval, as well as everything else that comes up under the contract where they are spending our money. We have a man at each plant authorized to make the necessary approvals, to approve expenditures, contracts, subcontracts, and the like.

Acting Chairman MEAD. Mr. Jones, in the contract bearing upon the question of Senator Ball, there is the provision that Alcoa is to use its best endeavors to acquire the lands for the sites for the Defense Corporation, and is to prepare and submit for approval plans for the construction of the plant and acquisition and installation of machinery and upon approval of such plans by Defense Corporation, is to proceed in accordance therewith and complete as soon as practicable.

Now, then, in view of the fact that they are called upon to submit the site to the Defense Corporation and they are to submit thereafter their plans for the construction of the plant, I wonder if they have submitted the sites and if they have submitted the plans. I would like to know rather clearly. Perhaps some of your associates could tell us just what the status of that provision of the contract is at present. Have they actually picked out the sites? We are anxious to get this aluminum under way, and so we would like to know if they have picked out the sites, if they have picked out all the

sites, if they have picked out any one of the sites. Now, who would know that?

Mr. JONES. Sam, do you know?

Mr. HUSBANDS. Yes, sir; they have picked the site at Massena, N. Y.

Acting Chairman MEAD. Massena, N. Y.?

Mr. HUSBANDS. Yes, sir; and we have approved it as being satisfactory.

Acting Chairman MEAD. What about the plans for the plant at Massena, N. Y.? The next step is to submit the plans to you.

Mr. HUSBANDS. I don't think plans have been submitted yet.

Acting Chairman MEAD. So they have picked the site.

Mr. HUSBANDS. They have picked the site and we have approved it.

Acting Chairman MEAD. And the plans are not available as yet. Could you tell us anything about the Arkansas plant?

Mr. HUSBANDS. I know that no site has been picked there.

Acting Chairman MEAD. That means no plans for the plant.

Mr. JONES. No location.

Acting Chairman MEAD. Now, the next is the Washington-Oregon site. Has there been a site decided upon out there?

Mr. HUSBANDS. I understand that Troutdale, Oreg., just across the river, has been selected.

Acting Chairman MEAD. That site has been agreed upon?

Mr. HUSBANDS. The site hasn't been definitely approved by us yet.

Acting Chairman MEAD. They have selected it but you haven't passed on it?

Mr. HUSBANDS. That is right.

Acting Chairman MEAD. Now, the last one is the aluminum plant at Arkansas. I understand there are two plants in Arkansas. One is the alumina and the other is the aluminum. I presume that is in the same category, no site yet?

Mr. HUSBANDS. That is right, but our engineers are in Arkansas now with Alcoa's engineers.

Acting Chairman MEAD. And there is a proposed site in Oregon, although it isn't agreed upon?

Mr. HUSBANDS. That is right.

Acting Chairman MEAD. All right.

Mr. FULTON. Mr. Jones, I noticed in the draft of this contract that originally it was contemplated that you might have as much as \$250,000,000 and that you have amended that to provide for construction to be at a maximum of \$52,000,000. Could you tell me why that change was made?

Mr. JONES. I never heard of the \$250,000,000.

Mr. FULTON. At all times you have thought of it as \$52,000,000 or \$50,000,000-odd?

Mr. JONES. The \$52,100,000, as I understand, was the estimate made by O. P. M. Is that correct?

Mr. HUSBANDS. Yes; correct.

Mr. JONES. Furnished to us. We didn't make the estimate.

Mr. FULTON. And then I noticed one more contract provision in the form of a letter dated August 19 to the effect that if they had any contracts for power which extended beyond the leased period of

the plants that they were to operate, you would take over their obligations under that contract or contracts.

Mr. JONES. Yes.

Mr. FULTON. So that under no circumstances would they be left with power which they had no use for.

Mr. JONES. That was the intention of the contract.

Mr. FULTON. Now, there is one other provision in the contract to the effect that the rate of operation of these plants must be the same as the rate of operation of Alcoa's plants. Do you recall that provision?

Mr. JONES. Yes, sir.

Mr. FULTON. And after the war, if the lease period should extend beyond the end of the war, which we all hope it will, that would mean that they could not have any production in Government plants except to the extent that they agreed to have production in their own plants, and thereby that they could automatically control the quantity of production of aluminum by reason of that provision in the contract.

Mr. JONES. That is not the purpose or the intent or the spirit of the contract.

Mr. FULTON. But it would be the effect of it.

Mr. JONES. I don't think so.

Mr. FULTON. How would you get around it in case——

Mr. JONES (interposing). As long as there is demand for aluminum it will be produced.

Mr. FULTON. But they are not obligated to run their plants unless they see fit, Mr. Jones. Under what provision of the contract?

Mr. JONES. Under the spirit of the contract, the intention of the contract.

Mr. FULTON. But not under its letter.

Mr. JONES. I think so.

Mr. FULTON. Well, the letter of the contract says the alumina plant shall be run at such times and at such rates as are agreed upon between the Defense Corporation and Alcoa.

Mr. JONES. All right.

Mr. FULTON. And if they don't agree it can't be run, can it?

Mr. JONES. I think so.

Mr. FULTON. Well, that would be——

Mr. JONES (interposing). I will get you to represent us and prosecute them. You are a pretty good prosecuting attorney, so we will get you to represent us.

Mr. FULTON. Now, then, there are other contracts with the Canadian affiliates or rather with the Aluminum Co. of Canada. There are two contracts with the Aluminum Co., Ltd., of Canada, are there not?

Mr. JONES. Yes, sir.

Mr. FULTON. And in those contracts I note that the price for the aluminum which you are going to purchase from that Canadian company is a firm price of 17 cents.

Mr. JONES. Yes, sir.

Mr. FULTON. Subject to an escalator clause in case their freight rate should be higher or their labor should cost them more.

Mr. JONES. Yes, sir.

Mr. FULTON. You announced, however, a short time ago, did you not, Mr. Jones, a negotiation whereby the price of aluminum in this country was to be reduced to 15 cents a pound?

Mr. JONES. Mr. Davis agreed that he would reduce the price of aluminum produced by the Aluminum Co. of America, from 17 to 15 cents.

Mr. FULTON. Did Mr. Davis also agree to reduce that price to this Canadian company?

Mr. JONES. He did not.

Mr. FULTON. From 17 to 15, although he is himself a heavy stockholder in that company, is he not?

Mr. JONES. I don't know.

Mr. FULTON. Did you ask the Canadian company to reduce their price to the same price that the Aluminum Co. and Reynolds and the American companies have?

Mr. JONES. We have not.

Mr. FULTON. Do you intend to do so?

Mr. JONES. Well, we will talk about that next time. I don't negotiate contracts in public meetings. I wouldn't make a very good contract if I did.

Mr. FULTON. If they are not willing to give up 2 cents under this contract you would have the right.

Mr. JONES. We would have no way of making them do it. That was bought some time ago and bought at the request of O. P. M., which agreed upon the price and everything else.

PROVISIONS OF METALS RESERVE CO. CONTRACTS WITH ALUMINUM CO. OF CANADA

Mr. FULTON. Well, the last contract for half of the 170,000 metric tons was on the 15th of July,¹ which I think was a couple of weeks before you announced your reduction to 15 cents.

Mr. JONES. I think it had been negotiated and agreed upon some little time before that.

Mr. FULTON. Well, that too, contains a provision that they are not liable for any delays or omissions due to causes beyond their control, which they cannot overcome by due diligence, does it not?

Mr. JONES. I haven't seen it; I assume so; I think it should.

Mr. FULTON. It also provides, in addition to that, that in case they can't perform their contracts that they entered into with other people before that time, that would constitute an excuse for not performing these contracts with the Government, paragraph 13, I think.

Mr. JONES. Which contract is that?

Mr. FULTON. Both. Paragraph 13 in the upper part of page 9.

Mr. JONES. Would you just as soon read it?

Mr. FULTON. [reading from Exhibit No. 120]:²

If for any cause beyond its control the seller shall be unable to produce sufficient aluminum to fulfill all of the contracts theretofore made by the seller for the delivery of aluminum, the seller shall, insofar as it may be permitted

¹ See Exhibit No. 121, appendix, p. 2298.

² See appendix, p. 2293 at p. 2297.

so to do, deliver to the buyer such proportion of its total production as the then monthly quantity of aluminum to be delivered hereunder shall bear to the monthly quantity to be delivered under all of the seller's contracts. In the event of such partial suspension of performance hereunder, each date specified in this contract shall be extended by such period of time as may be necessary to permit the seller to complete the aggregate deliveries of aluminum to be made hereunder.

Mr. JONES. That is the Canadian contract.

Mr. FULTON. That is the Canadian contract of May 2, 1941, and I think a similar provision is contained in the companion, No. 2, contract of July 15.

(The contracts referred to were marked "Exhibits Nos. 120 and 121" and are included in the appendix on pp. 2293 and 2298.)

Mr. FULTON. As a result of that provision, Mr. Jones, isn't it true that if they can't perform their obligation under the contract by reason of their having had other obligations they had entered into before, they haven't any obligation? You just extend their time to perform until such time as they can get around to doing it.

Mr. JONES. I assume.

Mr. FULTON. And this contract already runs as long as 1944. The question I had in mind is: Do you propose to enter into similar contracts with all the aluminum companies in the United States?

Mr. JONES. I didn't know there were very many.

Mr. FULTON. Well, with the several that there are, giving them the right to sell aluminum, no matter when they can produce it, in accordance with their existing obligations, up into a period such as 1944.

Mr. JONES. If requested by O. P. M.

Mr. FULTON. And did O. P. M. request this contract?

Mr. JONES. They did.

Mr. FULTON. Now, there is a provision that enables you to cancel this, but I think it costs you between 5 and 6 cents a pound for the aluminum that you haven't received if you do cancel it, isn't it?

Mr. JONES. Something of that kind.

Mr. FULTON. And I understand there is provision being made now for fabrication in Canada of a lot of this aluminum.

Mr. JONES. I don't know.

Mr. FULTON. The Metal Reserves Corporation, I understand, has a contract enabling it to have fabrication in Canada.

Mr. JONES. I am not familiar with that.

Mr. FULTON. I wondered whether that was in lieu of the fabrication that might otherwise take place on the west coast of the United States.

Mr. JONES. No; it would not be.

Mr. FULTON. Does the Aluminum Co. of Canada already have constructed the aluminum facilities that would be necessary to produce these 340,000 metric tons of aluminum that you have ordered from it?

Mr. JONES. No; we have made advances to them or agreed to enable them to expand their facilities.

Mr. FULTON. In each contract you gave them a \$25,000,000 payment of cash in advance, didn't you?

Mr. JONES. In one, yes; the other was a loan.

Mr. FULTON. So that in effect we are financing the expansion of their facilities.

Mr. JONES. In part.

Senator BALL. Is that \$25,000,000 a loan or direct cash?

Mr. JONES. One is a down payment in advance for materials, the other is in the nature of a loan.

Mr. FULTON. They pay interest on it until they deliver?

Mr. JONES. On the loan; yes, sir. They couldn't finance it themselves and couldn't increase the facilities without the loan.

Mr. FULTON. Was it your understanding that part of this aluminum might be furnished by the Aluminum Co. at 17 cents through the Aluminum Co. of Canada?

Mr. JONES. You mean by the Alcoa?

Mr. FULTON. By Alcoa.

Mr. JONES. That was not my understanding.

Mr. FULTON. But there is no provision in this contract requiring that this all be produced in Canada, is there?

Mr. JONES. That is the contract.

Mr. FULTON. I didn't note any such provision in it at the time, did you, Mr. Durr?

Mr. DURR. I am not familiar with the Canadian contract.

Mr. FULTON. So far as I can see, the Aluminum Co. of the United States could transfer it to the Aluminum Co., Ltd., of Canada, and have it delivered under this contract at 17 cents, whereas delivered in the United States it would be 15, although tariff duties might prevent that.

Mr. DURR. No; they wouldn't.

Mr. FULTON. But at least there is nothing in the contract to prevent it, is there?

Mr. JONES. It doesn't need to be in the contract. It is not contemplated and would not be permitted.

Mr. FULTON. How could you avoid it if they did it without any provision in the contract to prevent it?

Mr. JONES. We would avoid it.

Mr. FULTON. That is all.

PROVISIONS OF DEFENSE PLANT CORPORATION CONTRACT WITH ALCOA

Senator BALL. Mr. Jones, in this contract Defense Plant Corporation retains full title to these plants, I take it.

Mr. JONES. Yes, sir.

Senator BALL. I am talking about this \$52,000,000.

Mr. JONES. Yes, sir.

Senator BALL. There is no provision for Alcoa to purchase those plants at the end of the lease?

Mr. JONES. None.

Senator BALL. None, so we have retained full control. Then all they have, in effect, is a contract to construct the plants and then to operate them.

Mr. JONES. That is correct.

Senator BALL. And for operating them, they get 15 percent of the profits?

Mr. JONES. Net profits.

Senator BALL. And what do those net profits run at 15 cents a pound price; what are they likely to be, 2 or 3 cents?

Mr. JONES. I am not an expert on aluminum or on the manufacture of aluminum, but my estimate is that the Alcoa will not make a net profit on this contract exceeding a quarter of a cent a pound on the aluminum.

Senator BALL. You mean their 15 percent will amount to a quarter of a cent a pound?

Mr. JONES. I don't think it will exceed that, their entire net profit, even if some of it should arise from such sources as the examiner seems to think it might.

Senator BALL. Out of that half cent a pound for overhead?

Mr. JONES. Yes. The entire net profits of Alcoa under this contract will not, in my opinion, exceed one-quarter of a cent a pound, certainly not a half, and at that, either figure would be cheap, because they are the only people that are really qualified from experience to make aluminum in this country. The Reynolds Metals Co. are just getting started. They admit that they haven't all the bugs out of their operations. They doubt that they can make aluminum at 15 cents. This is an excellent contract for the Government.

Senator BALL. That interests me, that fourth of a cent a pound, because we were a little concerned here about that half cent allowance for overhead, over and above the one-fourth cent you put in for expense overhead which they can show under the plan, because their total profit, you say, is not likely to exceed one-fourth of a cent.

Mr. JONES. I don't think it will.

Senator BALL. That will allow them half a cent for overhead just flat, whether they can show it should be allocated to these plants or not, and it looks pretty steep to us.

Mr. JONES. Well, the overhead of a big corporation as far-flung as this one is, operating many plants, possibly 30 or 40, is large. They must have a pretty far-flung organization, and they must have a lot of men that are qualified to formulate and carry out the necessary plans for making this material, and while I don't have the figure, I would not be surprised if their overhead would run as much as a cent and a half a pound. Now we provide for the payment of only a half cent a pound for this.

Senator BALL. You would give them a quarter of a cent on overhead that they could definitely allocate to these plants, and then an additional half cent which they wouldn't have to show?

Mr. JONES. The quarter is to cover the specific employment of people and money otherwise expended where it can be said, "This man is working on this job," and so forth and so on. The overhead item is a half cent. We haven't read any of the things into the contract that have been indicated here by the examiner. We have what we think is an excellent contract. Mr. Davis has been very cooperative in making the contract. He might have liked to have had a more profitable contract. I don't doubt that he would have. I think it is a good contract from our standpoint, and I think it is a fair contract to him. I am not trying to punish him for having been a so-called monopoly. That isn't my job. That is the job of the Department of Justice. We are asked by O. P. M. to make a contract with him for the production of aluminum. I assume that

they thought that that was the best way to get the aluminum, and I don't doubt that it is. I would be afraid to start out with new people, untried and inexperienced people, when we are in an emergency, to try to produce aluminum.

Senator BALL. You think this estimated one-fourth cent a pound profit that they would be making is a perfectly fair profit to pay for their know-how?

Mr. JONES. Yes. If they made a half cent, I would think the cost cheap.

Senator BALL. I think what we have been concerned about on the committee is the danger that the fact that we have had to use Alcoa so much in increasing our production of aluminum is going to see them come out of this emergency with their monopoly position strengthened.

Mr. JONES. Well, I don't think it will. Frankly, the consideration that prompted us to make a loan to the Reynolds Metals Co. for the construction of 100,000,000-pound capacity, and now to consider an additional 60,000,000 pounds, was the necessity for building up a substantial competitor in the aluminum field. We have a contract with Olin Corporation. They are competent people. They haven't made aluminum, but they are competent in other lines. They will have a 30,000,000-pound capacity. If we deal with these other people, we will have, when the program is finished, a capacity as now planned of approximately one and one-half billion pounds annually of aluminum production. Alcoa's part will be about one-half of that, so that we will have something comparable to the steel situation, in which the United States Steel Corporation is competing with Bethlehem, Republic, Inland, and the other smaller companies. I think we will have plenty of competition in the business to insure reasonable prices, and I think that the agreement with Mr. Davis is very satisfactory. While it was not part of the contract, when we were nearing completion of the contract, I took up with him the question of the price, and he agreed to reduce the price to 15 cents. That reduction will mean a saving of from fifteen to twenty or twenty-five million dollars a year to the Government and to other users of aluminum. As I have already testified, Mr. Davis has been very cooperative in working out this contract. If there is anything unfair in the contract, he wouldn't hesitate to correct it now, I am perfectly sure.

Senator BALL. How about Reynolds, and Olin, and Union Carbide, I believe, these other companies that are building aluminum plants; are they financing that construction through Defense Plants Corporation or through an R. F. C. loan?

Mr. JONES. The Reynolds' present 100,000,000-pounds capacity is money borrowed. It is their plant.

Senator BALL. They own the plant?

Mr. JONES. One at Longview and one in Alabama. The 60,000,000 pounds that we are now in substantial agreement on will be, in all probability, a loan. They will own the plant, so they will have 160,000,000-pound capacity of their own.

The Olin is a Defense Plant Corporation plant, it will belong to us and be operated by Olin, for which we pay them a profit, including their overhead, of five-eighths of a cent a pound to operate. We pay them \$65,000 to build the plant.

Senator BALL. That is a fixed fee?

Mr. JONES. That is a fixed fee to build the plant.

Senator BALL. And then five-eighths of a cent a pound profit?

Mr. JONES. For the operation. We are paying Alcoa nothing for the plans and specifications, nothing for the erection of the plants.

Senator BALL. They get no fee for building these plants?

Mr. JONES. No fee for building the plants.

Senator BALL. You simply pay the cost?

Mr. JONES. We pay what they cost. They are our agents in buying the property and building the plants.

Senator BALL. And you pay, I presume, the salaries of their officers that are directly engaged.

Mr. JONES. Directly on the job.

Senator BALL. How come the contract with Olin—that is where you said five-eighths of a cent a pound—went on that basis instead of this 15 percent of the profits basis?

Mr. JONES. Well, every man that you deal with doesn't want to make the same agreement. Each undertaking results from separate negotiations and that is true in the dozens and dozens of plants that we are building. We like to do what the other party requests if we can, to do what he prefers if we can, if we think it is fair to the Government.

Senator CONNALLY. One is a Government-operated plant, and the other is a private plant.

Senator BALL. Both are Government-owned.

Mr. JONES. The Alcoa is Government-owned, and also the Olin, but the Reynolds up to now is borrowed money, they own the plants themselves.

Senator BALL. I gather you think that with the five-eighths-of-a-cent-a-pound contract with Olin, they will probably make more profit per pound than Alcoa on this deal.

Mr. JONES. I think they will.

Senator BALL. Although Alcoa will have much more volume.

Mr. JONES. Yes. This is a smaller operation. It is a sideline with Olin. They are doing other things. This is just something new as an accommodation. We tried to fix a fee that is commensurate with their services for doing a job we asked them to do. When I say, "we," I mean the Government.

Senator BALL. How come Alcoa got so big-hearted and was going to build \$52,000,000 worth of plants without charging anything? That rather surprises me.

Mr. JONES. That is the result of some 3 weeks of negotiation.

Senator BALL. Do you find many corporations playing that way these days?

Mr. JONES. Yes; a good many. We have contracted with the Carnegie-Illinois Steel Corporation to build three steel plants for ship plates and pig iron, at a total cost of about \$140,000,000. They get no fee for building the plants, and they pay us a rental for the plants, on 5-year leases. We have a contract with Republic Steel Corporation for building, I think it is, four plants for the production of pig iron. They get no fee. They pay us a rental based upon the amount of pig iron produced, so much a ton for the plants. We have made deals that suit the particular situation. It is a matter of negotiation and trying to trade on a fair basis with industry on behalf of the

Government. We think we have made fair trades, both to industry and to the Government.

Acting Chairman MEAD. There was one feature of the contract that worried me a little bit and probably you can clear it up. I don't know whether Mr. Fulton mentioned it in my absence or not, but it goes on to explain that Alcoa is required to keep records and accounts, and upon request by Defense Corporation to have a certified public accountant acceptable to Alcoa submit as soon as convenient after the close of any year a statement showing certain things with provision, however, for possible arrangements to the effect that due aid be given to natural advantages and disadvantages, and so on.

What worried me was that the certified public accountant should be acceptable to Alcoa.

Mr. JONES. Should be acceptable to both parties.

Acting Chairman MEAD. It says Alcoa is required to keep records and accounts and, upon request of Defense Corporation, to have a certified public accountant. Now, I wonder if the Defense Corporation picks that accountant in the first place—that would be all right if they did—and then have that accountant acceptable to Alcoa after the selection was made; or is it a case where Alcoa picks the certified public accountant, and it is an accountant who is acceptable just to Alcoa?

Mr. JONES. I think what we would do, Senator, would be to say, "Well, we will name half a dozen of the best people in this line of business in the country, and we will agree upon which one of those will do it this year; and maybe next year we will agree upon another one."

Acting Chairman MEAD. But Defense Corporation would have something to say in the selection?

Mr. JONES. Oh, absolutely. I think if we selected an outstanding institution, one of good reputation, there is no doubt about Alcoa's agreeing to it, and vice versa. We would have no difficulty about that, because a reputable institution has to come clean or they don't stay in business.

Acting Chairman MEAD. The contract says, "acceptable to Alcoa," and that is what bothers me.

Mr. JONES. Acceptable to both of us.

Senator CONNALLY. "Acceptable to Alcoa" presumably means that somebody else selects him in the first instance, and then he is acceptable to Alcoa.

Acting Chairman MEAD. That is what I wanted to make clear.

Senator CONNALLY. It is a clear implication. It doesn't say "appointed by Alcoa," but "acceptable" to them, and then it is submitted to Alcoa as to whether it is acceptable or not.

Acting Chairman MEAD. That is what I wanted to bring out.

Mr. JONES. In practice that is what would be done.

Acting Chairman MEAD. In practice, you would make the selection, and the selection would later be accepted by Alcoa. That is the procedure that will be followed?

Mr. JONES. I assume when that time comes, we will suggest Arthur Young & Co., or Price, Waterhouse & Co., or any one of several other institutions. We thought of writing in the names. I thought probably we had. We did determine, however, that we would later select somebody to be agreed upon.

Acting Chairman MEAD. I have a telegram from the chairman, and he said to ask someone a question, and I suppose I might just as well ask you. He may mean Mr. Husbands.

Ask if the other light-metal makers received the same concession and if Defense Plant Corporation has not given Alcoa all the eye teeth taken from the little fellows by guaranteeing Alcoa's profit.

That is signed by the chairman of the committee.

Mr. JONES. Alcoa is working for a fee; it is not working on the basis of profit so much. It is really a fee. We discussed with them the question of half a cent a pound or something like that, and that ran into a great deal of money, so I think it was our idea that we would get off cheaper and that they could make some money by giving them \$15 out of every \$100 that they make, if they make any.

Acting Chairman MEAD. The chairman wanted to be sure that the small-metal men were getting the same consideration.

Mr. JONES. I think the small fellow is getting a better deal than this.

Acting Chairman MEAD. You know my interest in them, and if you can stretch a point there, take good care of the little fellow.

Mr. JONES. We always favor him.

Acting Chairman MEAD. By the way, are they locating any of these plants in Texas?

Mr. JONES. None.

Senator CONNALLY. That is probably the main defect in the program.

Mr. JONES. I suppose our two illustrious Senators are not protesting enough about it.

Acting Chairman MEAD. They have one of them pretty busy.

Mr. JONES. Have they?

Acting Chairman MEAD. He is taking care of affairs all over the world now.

Mr. JONES. I think it has been suggested that some of these plants be located in Texas, because if other States don't want them, maybe they will welcome them there.

Acting Chairman MEAD. Have they the bauxite down there?

Mr. JONES. It is closer from Arkansas to Texas than it is from Arkansas to the State of Washington.

I would be very glad to submit an analysis, a summary of this contract, as we construe the contract. I would like to submit that and have it put in the record.¹

Acting Chairman MEAD. That is all right. That is agreeable, and we will be very glad to have it.

Mr. JONES. We made the contract, we think we know what is in it, and we think we know what we are trying to do. I would like to put it in the record.

Acting Chairman MEAD. If Alcoa will put a similar statement in the record or agree that yours is theirs, we will be all right.

Mr. JONES. That will be fine.

Acting Chairman MEAD. No other questions. The committee excuses you, Mr. Jones. Thank you, sir.

The committee will adjourn until further call.

(Whereupon, at 3:55 p. m., the committee adjourned subject to the call of the Chair.)

¹ Subsequently submitted and included in the appendix on p. 2306 et seq.

APPENDIX

EXHIBIT No. 95

[Submitted by Lt. Col. Edwin S. Van Deusen, Quartermaster, Chief Procurement Branch, Motor Transport Division, Quartermaster Corps, War Department]

THE ADVISORY COMMISSION TO THE COUNCIL OF NATIONAL DEFENSE,
Federal Reserve Building, Washington, D. C., November 14, 1940.

Maj. Gen. E. B. GREGORY,
The Quartermaster General.

DEAR GENERAL GREGORY: Mr. Knudsen has approved negotiation of a contract with the American Bantam Car Company, Butler, Pennsylvania, for fifteen hundred trucks, $\frac{1}{4}$ -ton, 4x4, Command Reconnaissance, at a unit cost of \$955.59 less one percent for payment in ten days.

As you know, we concurred in your original recommendation that this important new unit be purchased from two or three sources of supply so that the combined facilities of such companies would be available in the event of a major emergency. I personally explained our viewpoint and reasons to General Moore, Deputy Chief of Staff, and to Colonel Hester at a conference in General Moore's office this morning.

After considering the facts, it was General Moore's decision that you would be promptly authorized to negotiate similar contracts for fifteen hundred, $\frac{1}{4}$ -ton, 4x4's with the Ford Motor Company and the Willys-Overland Company, subject to approval of their pilot models.

This satisfactorily meets our contention for multiple sources of supply consistent with recommendations we have made to you on other trucks from the $\frac{1}{2}$ -ton to the 6-ton types. Therefore, on the basis of this assurance, we approved the Bantam contract.

There is just one other point of major importance. Your file indicated that the Ford Motor Company could expedite the delivery of axles and transfer cases by loaning certain tool equipment to the Spicer Manufacturing Company prior to the delivery of that which they have on order. We suggest that full advantage be taken of this offer, and if the Ford and Willys pilot models merit prompt approval we believe that maximum early deliveries to the armed services could be best accomplished by some equitable division of the axle production between the three truck manufacturers.

Sincerely,

JOHN D. BIGGERS.
John D. Biggers.

EXHIBIT No. 96

[From the files of the War Department]

WAR DEPARTMENT
WAR DEPARTMENT GENERAL STAFF
Supply Division G-4
WASHINGTON, D. C.

Brief:

1. Memo. from the D. C. of S. indicates that additional WPA funds might be available for allotment to the War Dept.

2. The QMG was directed to prepare a list of possible additional projects and submitted list accordingly.

3. G-4 felt called upon to make recommendations, but after receipt of The QMG's letter it was evident that recommendations would be useless as a large

part of the items contained on the list were merely transferred from State projects by the W. D. Liaison Officer, and other items were picked up by the Liaison Officer and processed many without reference to G-4.

4. The QMG in his letter invites attention to the large amount—much of it unnecessary—of labor imposed upon his office by frequent and continuing changes in projects after they had been prepared. G-4 feels that a large part of this unnecessary work can be eliminated.

5. G-4 has felt for some time that too much relief money is being allotted and that all the labor for which money is allotted is not being, or cannot be employed on Army posts. These views are borne out by comments of The QMG. The QMG states that it is his considered opinion that little or no addnl. WPA money can be advantageously used between now and June 30, and that further relief labor cannot be logically or economically employed at most of the posts. Suitable action to rectify present conditions is recommended.

W. M. R.

WAR DEPARTMENT
OFFICE, SECRETARY, GENERAL STAFF
Disposition Slip

Subject of paper: -----

To	Talley No. 20808-94	Date
-----	Office, The Ass't Sec. of War-----	-----
-----	Office, Ass't Sec. of War (Air)-----	-----
-----	A. C. of S., G-1-----	-----
-----	A. C. of S., G-2-----	-----
-----	A. C. of S., G-3-----	-----
-----	A. C. of S., G-4-----	-----
-----	A. C. of S., W. P. D.-----	-----
-----	The Adjutant General-----	-----
✓-----	Budget & Legislative Planning Branch-----	5-5-38
-----	Statistics Branch-----	-----
-----	Executive for Reserve Affairs-----	-----

- For—
- Necessary action.
 - Correction.
 - Note and return.
 - Remark and recommendation.
 - Comment or concurrence.
 - Inviting attention to {notation} of Sec. War----- D. C. of .
 - {direction}
 - Draft of reply.
 - Direct reply.
 - Note and file.
 - File.
 - Signature.

Maybe if a few bills were indulged in by all concerned this would solve itself.
By direction of D. C. of S.:

P. E. PEABODY,
Major, General Staff,
Asst. Secretary, General Staff.

War Department.
O. C. of S.—Form No. 3.

WAR DEPARTMENT,
WAR DEPARTMENT GENERAL STAFF,
Washington, D. C., April 28, 1933.

Memorandum for the Chief of Staff:
Subject: Additional W. P. A. Allotments.

I. *Facts bearing upon the subject.*—1. Following receipt of memorandum from the Deputy Chief of Staff on the above subject (OCS 20808-94), the Quartermaster General was directed to prepare a list of possible places where additional W. P. A. funds could be used. In compliance with that request, he submits the attached mimeographed sheet of W. P. A. projects (table A). This, however, does not represent a list of additional projects, for by far the greater proportion of

the items on this sheet are projects that were submitted as State projects which were on file in the W. P. A. offices here and which were transferred to the War Department list at the instigation of the War Department liaison officer. Such a transfer is, of course, an advantage to the War Department, as it means that the money is available for immediate purchase of material. There are difficulties involved, however, in such transfers, as is explained in detail by the Quartermaster General and as is indicated on the sheet showing the number of months the State projects were to run. This period varied all the way from 3 to 12 months, whereas the projects for which the War Department could request funds were limited to 3 months, ending June 30, 1938. Naturally, this would mean that many more men would have to be employed for the same amount of money for the shorter period of time, and such additional labor, in many cases, was not available. However, these projects were processed by the liaison officer without waiting for formal presentation to G-4 and, as indicated by the Quartermaster General in ink, "Presidential approval for most of them has been given." The fact that these projects were originally prepared on the basis of more than 3 months necessitated their return and the preparation of new sets of papers based on a 3 months' estimate. This required an undue and unnecessary amount of work which could have been and should be avoided in the future.

2. Although the A. C. of S. G-4 felt that he was called upon to make recommendations based on the above directive of March 28, such recommendation is now useless as most of these items have already been processed, a good many with the consent and approval of G-4, it is true, but many of them at the expense of an undue amount of work on the part of the Quartermaster General. It requires just as much time and effort to prepare one project for \$10,000 as it does to prepare a project for a million dollars. Furthermore, a constant changing and shifting is not good for the morale of the personnel employed on work of this nature. In his letter the Quartermaster General invites attention to this fact (table B).

3. G-4 has felt for some time that too much relief money is being allotted. It is true that if the money is available, material can be purchased and the War Department is the gainer. On the other hand, the money is allotted with the understanding that a certain amount of relief labor is available and will be employed. Situations change fast, but the various post commanders do not appreciate this. They are aware that there is much relief labor and that funds for employing this labor are available. They want the money so they can purchase material, but many of them do not want to employ so much relief labor. The Quartermaster General lists several examples in paragraph 3 of his letter and states: "Fort Benjamin Harrison has indicated that it could have used 700 additional men to advantage. Camp Custer, 500, and Fort Wayne, 300; that up to and including April 8, \$225,000 has been allotted to Fort Benjamin Harrison, sufficient to employ 755 men to June 30, but on April 2 that post reported only 136 men employed. Camp Custer, which received \$180,000, estimated to employ 645 men, reported only 160 employed; and Fort Wayne, with \$200,000, estimated for the employment of 336 men, was employing only 285." In spite of these figures, additional requests have been submitted to the W. P. A. for \$100,000 for Camp Custer and \$50,000 for Fort Wayne, on advice from the field that labor would be made available. While G-4 appreciates that the allotment of this money to the field is an advantage to the War Department, the fact that local W. P. A. officials are not assigning the labor for the jobs, although it was once stated by them that labor was available, or the possibility that post commanders may not request or utilize relief labor, if available, may lead to very embarrassing situations in the future in case an investigation is made and it is found that we have obtained this money and then not used the corresponding number of relief laborers that were supposed to be employed. The Quartermaster General states that it is his considered opinion that little or no additional W. P. A. money can be advantageously used between now and June 30, and that further relief labor can neither be logically nor economically employed at most of the posts.

4. Nevertheless, the liaison officer has reported, as shown in paragraph 5 of the Quartermaster General's letter, that additional labor is available at various stations, one of which included Fort Hancock, where 47 men were available at once. On the other hand, a project in the amount of \$15,000 was recently disapproved for that post, due to lack of labor. (April 15, verbally to the Quartermaster General.)

5. The Quartermaster General states that the piecemeal, contradictory, and confusing method of submitting W. P. A. programs in the past few months with

the constant adjustments due to increases, closely followed by decreases and other adjustments, has increased paper work to such an extent that a terrific burden has been placed not only upon the office of the Quartermaster General but correspondingly upon the office of the Chief of Finance, the disbursing officers, corps area headquarters, and on post authorities. He lists one outstanding case, but for which, it is admitted, there is some excuse—Fort Lewis, Washington. Since January 1, 1938, approximately 15 different letters or telegrams, referring to 15 different allotments of W. P. A. funds, have been received. This represents but one case of many.

6. G-4 feels that this huge amount of unnecessary labor should be brought to the attention of the Chief of Staff, and that it should be reduced in the future. In order that this may be properly accomplished, G-4 recommends that requests for W. P. A. funds, except in most exceptional cases, should be made only at the beginning of each 6 months of the fiscal year, or, at most, four times a year at 3-month periods. The fact that relief labor changes from day to day should not affect careful War Department planning, but all agencies can and should expect that their estimates should be based on conditions as they exist on a certain date. In no other way can accurate estimates be submitted and the great burden of unnecessary clerical labor eliminated.

7. All future applications for W. P. A. funds should be held to a definite program, prepared in collaboration with the various chiefs of services, and the Quartermaster General should receive instructions to base his request on that program. Furthermore, the liaison officer should confine his efforts to furthering that program, unless a change has been considered and approved by G-4. Only by such a method can a coordinated program be worked out and the unnecessary paper work now placed upon the Quartermaster General eliminated. Steps looking toward a well-planned and coordinated program for the fiscal year 1939, have already been taken, as evidenced by letter on "Policies regarding W. P. A. funds," published to the service under date of March 28, 1938, copy attached (table C).

II. *Action recommended.*—The Secretary of War directs:

(1) That the Quartermaster General be advised substantially as follows:

"In the future, requests for W. P. A. funds will be submitted only twice a year, at the beginning of each 6 months of the fiscal year. No projects will be submitted at other times than above indicated, except where urgent conditions arise which necessitate immediate consideration, and delay until the next period would be clearly against the interests of the War Department.

"All requests for relief funds will be based on a carefully prepared plan under the supervision of G-4, based on recommendations received from the field and from the various chiefs of branches concerned. The actual preparation of the program will, as heretofore, remain a function of the Quartermaster General. The War Department Liaison Officer will devote his efforts to furthering the program presented and changes in this program will be made only with the approval of the Assistant Chief of Staff, G-4."

(2) That all chiefs of arms and services be advised of the above action.

GEORGE P. TYNER,
Brigadier General,
Assistant Chief of Staff.

(MCB. Incls. OCS 20808-94, 3/28/38. Ltr. fm the QMG, 4/19/38—w. 1 incl. Copy of Policy re WPA Funds, 3/28/38.)

WAR DEPARTMENT,
WAR DEPARTMENT GENERAL STAFF,
Washington, D. C., May 4, 1938.

Memorandum for Secretary, General Staff:

Subject: Additional Work Projects Administration allotments.

1. I have had this paper on my desk for several days. I do not think I will sign it.

2. Please send it upstairs to Colonel Chaffee and ask him to read the Quartermaster General's memorandum of April 19 herewith, table B. I think, after Colonel Chaffee has read that, he can put the brakes on his representative in such a way that we won't be asking for money when we can't use what we now have, and we won't be building a theatre some place where it is not allowed.

3. Colonel Robertson, my executive's brief hereon, expresses my ideas exactly.

4. The liaison officer from the Budget and Legislative Planning Branch has valuable contracts and secures large amounts of money. However, G-4 is in the picture, and must be on account of the construction and repair program, and the Quartermaster General spends the money. I hope General Embick will decide that G-4 will be the go-between between the liaison officer and the Quartermaster General.

5. Please note Baade's paper. If the War Department spent its 15 percent for window sash and, on June 30, has many thousands of dollars of labor unspent, someone may: *a.* Charge the War Department with bad faith. *b.* With this project partially completed and sticking up in the air, the War Department will surely be asked to take B. & Q. money and finish the project in the F. Y. 1939 in case we don't get W. P. A. money.

GEORGE P. TYNER,
Brigadier General,
Assistant Chief of Staff.

(Incls. G-4/29778 to CoS 4/28/38 with incls.)

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
Washington, D. C., March 28, 1938.

Memorandum for the Deputy Chief of Staff:

Subject: Additional Work Projects Administration allotments.

I. *Facts bearing upon the subject.*—1. Based on information received by this office from the W. P. A. and the Bureau of the Budget, the Deputy Chief of Staff on February 18, 1938, directed the Assistant Chief of Staff, G-4, to have prepared a program for additional W. P. A. work on Army posts which is being financed by further allotments to the War Department to be made by the President.

2. Out of the \$250,000,000 recently made available to the W. P. A. by Congress the President set aside \$20,000,000 for direct allocation by him to Federal departments "subject to clearance by the Works Progress Administration as to the availability of labor only." In his directive the President stated that "at least one-half" of the \$20,000,000 will be "made available to the Navy and War Departments, exclusive of any funds that may be made available to the Corps of Engineers for flood control."

3. To date the W. P. A. has cleared labor to the number of 30,031 relief workers and on this the Bureau of the Budget has allocated to the War Department \$8,540,500. The allocations to the various Army posts for this amount have been agreed upon in conferences attended by General Seaman and Captain Violante of the Quartermaster Corps; Colonel Hartman from the office assistant Chief of Staff, G-4, and Major Wilson of the Budget and Legislative Planning Branch.

4. Inasmuch as the President used the phrase "at least" and other Federal departments are not organized to promptly place at work relief labor to the same degree as is the War Department, it is probable that an additional amount approximating \$3,000,000 can be secured by the War Department for work during the balance of the current fiscal year, providing prompt action is taken. With this in view it is believed that the assistant Chief of Staff, G-4, should request the Quartermaster General to make a final review of the possible projects on all Army posts, stations, and national cemeteries where additional relief labor can be used during the balance of the current fiscal year.

II. *Action recommended.*—That the Deputy Chief of Staff sign the attached memorandum for the Assistant Chief of Staff, G-4.

ADNA R. CHAFFEE,
Colonel, General Staff,
Chief, Budget and Legislative Planning Branch.

Approved March 28, 1938, by order of the Secretary of War.

S. D. EMBICK,
Major General, Deputy Chief of Staff.
(Encl. Memo. for A. S. C., G-4 of 3/28/38.)

BUDGET & LEGISLATIVE PLANNING BRANCH

OFFICE OF DEPUTY CHIEF OF STAFF

Subject: G-4/29778 of April 28 and May 4, 1938, "Additional W. P. A. allotments."

To	No.	Date
	Asst. Sec'y of War	
	A. C. of S. G-1	
	A. C. of S. G-2	
	A. C. of S., G-3	
	A. C. of S., G-4	
	A. C. of S., W. P. D.	
	The Adjutant General	
	Budget Officer, W. D.	
(x)	Secretary, G. S.	June 3, 1938

For:

Study and preparation of reply.

Signature Secretary of War.

Note and return ———.

Comment or concurrence.

(x) Attached memorandum for the Deputy Chief of Staff.

By direction of the Deputy Chief of Staff:

ADNA R. CHAFFEE,
Colonel, General Staff,
Chief, B. & L. P. Branch.

WAR DEPARTMENT

OFFICE CHIEF OF STAFF

WASHINGTON, D. C.

To B. & L. P., for file without action.

L. D. E.

SEPT. 26/38.

A. W.

FILE—"For the record."

WILSON.

OCS/20808—94.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF STAFF,
Washington, D. C., June 3, 1938.

Memorandum for the Deputy Chief of Staff:

Subject: G-4/29778 of April 28 and May 4, 1938, "Additional W. P. A. allotments."

1. I have read the Quartermaster General's memorandum of April 19, 1938, and the memorandum prepared in the G-4 Division which the Assistant Chief of Staff, G-4, attached thereto without signature.

2. Army Regulations place the responsibility for fiscal and legislative planning and policy upon the Deputy Chief of Staff. Also, by order of the Secretary of War, dated June 29, 1936, the Budget and Legislative Planning Branch, Office Deputy Chief of Staff, is also made the contact agency of the War Department for procuring funds from emergency agencies of the Government in order that the direction of procuring all funds should be centralized in the Deputy Chief of Staff. Major Wilson and myself have no independent status; we are but agents for the Deputy Chief of Staff.

3. It is impracticable to secure Work Projects Administration funds with the regularity that appropriated funds are secured. They are secured bit by bit, as a rule, as their application to the ever-changing relief situation varies in the country and as money is released by the Work Projects Administration or the President. Relief money goes where relief labor is available; it cannot be directed entirely from the military viewpoint alone. Relief funds are not offered to the War Department; they are secured only by active and persistent effort. It is frequently necessary, first, to find out that funds may be available for distribution to the War Department; and, second, to tie up those funds

pending the development projects to consume entirely or in such measure as the War Department can consume. Otherwise, they would be given to some other governmental agency.

4. The verbal instructions of the Chief of Staff to me on several occasions have been to secure as much of these funds as the Army could profitably use. In one instance, he sent an officer from my office to one Corps Area Headquarters with definite instructions to that corps area commander to so organize and to take full advantage of these funds, which was not then being done. He also sent an officer from my office on an extended trip for the purpose of bringing corps area and post commanders into better understanding with State and local Work Projects Administration administrators in order that the Army might process desirable projects more promptly and correctly and in order that fuller advantage might be taken of the opportunity to obtain State Work Projects Administration funds for War Department purposes.

5. Undoubtedly, much extra labor is thrown on the Quartermaster General by the need of processing these projects throughout the year; but the Quartermaster General has been provided with administrative funds to hire the employees to do this extra labor. It is my understanding that he has approximately 90 employees in his office paid from Work Projects Administrative administrative expense funds.

6. Many Work Projects Administration projects involve other agencies than the Quartermaster General—the Ordnance Department, Engineer Corps, and Air Corps have operated projects. Some projects, such as mapping and cemetery projects do not involve G-4. I have previously explained to General Tyner some of the difficulties of gearing the operations of the War Department which is a conservative, painstaking, and relatively slow-moving machine to the operations of the Work Projects Administration, and the Bureau of the Budget which is the disbursing agency for the President's work relief funds, both of which are decentralized and fast-spending agencies dealing largely in expedience to get relief money distributed to relief workers promptly.

7. I have filed in this office a long memorandum of categorical answers to the Quartermaster General's memorandum and the unsigned memorandum of G-4. I believe it does no good to burden the Deputy Chief of Staff with these details.

8. Action recommended.—That no change made in the existing set-up or general instructions, and that G-4/29778 be sent to file.

ADNA R. CHAFFEE,
Colonel, General Staff,
Chief, Budget and Legislative Planning Branch.

MEMORANDUM

WAR DEPARTMENT,
OFFICE OF THE QUARTERMASTER GENERAL,
Washington, April 19, 1938.

Subject: Additional Work Projects Administration Projects.
To: Assistant Chief of Staff, G-4.

1. In compliance with directive contained in your memorandum of April 2 forwarding memorandum from the Deputy Chief of Staff with reference to additional Work Projects Administration allotments, there is enclosed herewith a photostatic copy of the latest revised supplementary Work Projects Administration program dated April 14, 1938. This program covers additional projects for accomplishment at Army posts and stations during the balance of fiscal year 1938. As will be observed, the major portion of this program is comprised of locally sponsored State projects which have been submitted to Work Projects Administration and which were in their initial state of process. These projects have been identified by an asterisk.

2. As originally set up the above-mentioned locally sponsored projects varied as to time of completion, from 3 months to 12 months. Supplemental programs prepared by this office included the projects referred to above at the request of the War Department liaison officer. Copies of this program were obtained by that officer without prior approval of the G-4 section of the General Staff and were submitted to the Work Projects Administration for labor clearance thereon, and to the Bureau of the Budget for the preparation of the Presidential

letter. A few days later a supplemental program was prepared by this office reducing all projects to a 3-month level at the request of the War Department liaison officer and copies were furnished that officer who again submitted same to the Work Projects Administration for labor clearance. Immediately thereafter, a Presidential letter was received approving amounts set up on the first program in some instances and on the second program in other instances, with time of completion varying from 3 to 12 months. This necessitated the preparation of an entirely new program, a copy of which is attached hereto. Projects which have been approved to date and on which telegrams of authorization have been sent to the field have been indicated on the attached exhibit by the letters PA. It will be noted that these projects include the construction of a dock at Raritan Arsenal and the construction of theaters at Fort McPherson and the Presidio of San Francisco. The item for the construction of a theater at Fort Jay has been approved but it is being withheld by this office pending further instructions from your office.

3. Fort Benjamin Harrison, Ind., has indicated that it can use 700 additional men to advantage; Camp Custer, Mich., 500 additional men, and Fort Wayne, Mich., 300 additional men. Up to and including April 8, a total of \$225,000 has been allotted to Fort Benjamin Harrison, which covers the estimated employment of 755 men to June 30. On April 2, this station reported 136 men employed. Camp Custer has received \$180,000 for the estimated employment of 645 men, and on April 2 this station reported 160 men employed. Fort Wayne, Mich., has received \$200,000, covering the employment of 336 men as estimated, and on April 2, 285 men were at work at this station. In spite of these figures, additional requests have been submitted to the Work Projects Administration for \$100,000 for Camp Custer and \$50,000 for Fort Wayne on advice from the field that labor would be made available.

4. It is the considered opinion of this office that little or no additional Work Projects Administration money can be advantageously used between now and June 30, and that further relief labor can neither be logically nor economically employed at most of the posts. The programs at all stations have been built up to the maximum number of men that can be secured and to obtain additional funds at this time would cause untold administrative difficulties after the first of July. In any event, it is expected that there will be considerable balances at many stations which must be carried over to the next fiscal year, although every effort will be made at all stations to expend funds by that date. This could probably be accomplished if it were possible to obtain the required number of relief workers but a great many stations are having difficulty in this matter, as for example, Raritan Arsenal. A telegram from this station on April 8 states that only 600 additional men were available, whereas 1,500 men would be required to exhaust funds this year.

5. Since the above was written, the liaison officer has furnished this office the following memorandum, "The following additional clearances for labor have been received in the Work Projects Administration: Beverly National Cemetery, 150 at once; Fort Hancock, N. J., 47 at once (cleared); Fort Monmouth, N. J., 100 at once; Fort Sheridan, Ill., 300 at once; Fort Wayne, Mich., 300 at once; Camp Custer, Mich., 500 at once; Fort Ethan Allen, Vt., 130 at once (\$15,000); Fort Brown, Tex., May 15 to June 30, 60; Camp Stanley, continue O. P. 513-2-80, May 15 to June 30, 141; Huachuca, \$50,000."

Two projects were originally submitted for Fort Hancock, one in the amount of \$15,000 and one in the amount of \$10,000. The only one cleared was the one for \$10,000. The \$15,000 application was returned disapproved.

6. The piecemeal, contradictory, and confusing method of submitting Work Projects Administration programs in the past, with the constant adjustments made necessary by increases, closely followed by decreases, and other adjustments has increased paper work to such an extent that a terrific burden has been placed not only upon the office of the Quartermaster General, but correspondingly upon the office of the Chief of Finance, the disbursing officers, corps area headquarters, and on post authorities. In the interest of efficiency and in order that post authorities and operating agencies may be relieved of this considerable burden it is recommended that these facts be brought to the attention of the liaison officer with a view of evolving a more logical, simplified, and efficient method of submitting future Work Projects Administration programs. The many telegrams of inquiry and letters of allotment which have been sent to the field this year have resulted in confusion and uncertainty both in this office and the field. A typical case in point is that of Fort Lewis. On January 1, 1938, a letter of allotment for \$10,000, roads, and \$30,000, buildings, was mailed the Ninth Corps Area. On February 1, 1938, a letter of allotment

was mailed authorizing \$25,000 for roads and \$80,000 for buildings. On February 18, 1938, a radiogram was sent Fort Lewis asking whether they could expend \$150,000 additional Work Projects Administration funds by June 30. On March 3, 1938, a letter of allotment was mailed authorizing \$61,000 for buildings under a new official project number. On March 10, 1938, a telegram was sent Fort Lewis stating that \$300,000 for buildings and \$50,000 for roads would be allotted within 2 weeks for additional Work Projects Administration projects. These were made available to the field on March 19. In the meantime, on March 12, 1938, a letter of allotment was mailed allotting \$72,500 for buildings under an entirely new official project number. On March 28, 1938, another letter of allotment was mailed under the old original official project number allotting \$70,000 under "Buildings." On March 30, 1938, another letter of allotment was mailed authorizing \$75,000 under "Buildings." Still another official project number was used. The original application from this office requested \$185,000 for Fort Lewis. Through some manipulation the amount finally received was for \$145,000, broken down into two allotments of \$75,000 and \$70,000.

7. This is only one case which indicates the necessity for the establishment of some definite logical policy. Similar changes occurred at Camp McCoy, Fort Belvoir, Fort Sheridan, and many other stations.

For the Quartermaster General:

A. OWEN SEAMAN,
Brigadier General, Q. M. C., Assistant

Compilation showing funds allotted to War Department projects (except Corps of Engineers) by the Work Projects Administration since its establishment*

Fiscal year	Total available to Work Projects Administration to end of fiscal year ¹	Project authorizations		Total ²	Administrative money expended ³	Grand total
		State	Federal			
1936.....	⁴ \$4, 679, 473, 143	\$2, 863, 398	\$15, 381, 398	\$18, 244, 796	⁵ \$350, 178	\$18, 594, 974
1937.....	⁴ 2, 354, 500, 000	14, 455, 787	13, 232, 796	27, 688, 583	⁵ 187, 186	27, 875, 769
1938.....	⁴ 1, 847, 672, 270	20, 727, 398	⁶ 29, 351, 309	50, 078, 707	⁵ 317, 525	50, 396, 232
1939.....	⁴ 2, 150, 000, 000	54, 329, 597	21, 045, 003	75, 374, 600	⁷ 1, 134, 741	76, 509, 341
1940.....	1, 477, 000, 000	22, 042, 404	17, 501, 054	39, 543, 458	691, 974	40, 235, 432
1941.....	1, 350, 650, 000	75, 320, 713	10, 272, 732	85, 593, 445	396, 340	85, 989, 785
Total.....	13, 859, 295, 413	189, 739, 297	106, 784, 292	296, 523, 589	3, 077, 944	⁸ 299, 601, 533

¹ Includes the basic acts plus deficiency bills plus additional amounts transferred from other emergency agencies.

² Figures represent expenditures for fiscal years 1936 and 1937 and authorizations for fiscal years 1938, 1939, 1940, and 1941.

³ Figures represent expenditures for salaries and administrative expenses incident to Work Projects Administration work in the office of the Chief of Staff, office of the Chief of Air Corps, office of the Quartermaster General, office of the Assistant Secretary of War, office of Surgeon General, Chief Signal Officer, Chief of Finance, and office of the Military Division, Corps of Engineers.

⁴ This figure includes National Youth Administration.

⁵ In addition there was available for use of the Quartermaster General, the following amounts which could have been used for administrative expenses (e. g., hire of architects, draftsmen, statisticians, clerks, etc.) but which were not used: Fiscal year 1935, \$418,892; fiscal year 1936, \$470,586; fiscal year 1937, \$513,779; fiscal year 1938, \$1,150,040; total, \$2,553,297. (The amount available for administrative expenses was limited for the fiscal year 1939 to 5 percent of total direct Federal allocations; for the fiscal year 1940 to 4 percent and to 3.4 percent for the fiscal year 1941. All funds available for administrative expenses have been expended since 1939.)

⁶ In addition, there was available for direct Federal allotment projects approximately \$8,000,000 for the War Department, but it was not used.

⁷ Of this amount \$68,000 was a special allotment to the office of the Quartermaster General for development of plans for air arsenals. All available administrative funds were used.

⁸ This figure includes the following amounts for Puerto Rico: Fiscal year 1937, \$355,291; fiscal year 1938, \$1,133,000; fiscal year 1939, \$901,000; fiscal year 1940, \$2,625,000; fiscal year 1941, \$5,166,194; total, \$10,180,485.

* In the fiscal year 1935 there was received from the Federal Emergency Relief Administration and the National Industrial Recovery Administration (which agencies preceded the Work Projects Administration), \$5,590,227.

ARTHUR R. WILSON,
Lieutenant Colonel, General Staff,

Liaison Officer for the War Department with Federal Work Administration.

Compilation showing funds allotted to War Department projects (except Corps of Engineers) by the Works Progress Administration since its establishment, Mar. 20, 1939

Emergency Relief Administration Act	Fiscal year	Total available to Work Projects Administration to end fiscal year ¹	Allotted to Army for roads, utilities, etc.		Administrative expenses					Flood relief ⁸	Grand total
			Federal	State	Total	Surgeon general ²	Chief signal officer ³	Chief of finance ⁴	Office of the Quartermaster General ⁵	Total	
1935	1936	7 \$4,679,473,143	\$15,381,398	\$2,863,291	⁸ \$18,244,689	\$11,000	\$24,984	---	\$314,194	⁹ \$350,178	\$18,594,867
1936	1937	7 2,354,500,000	13,232,796	14,455,787	⁸ 27,688,583	10,000	---	\$21,432	155,754	⁹ 187,186	11 31,485,778
1937	1938	7 1,847,672,270	29,351,369	20,727,898	⁸ 50,079,267	---	32,600	16,000	268,925	⁹ 317,525	12 11 50,396,232
1938	1939	7 2,150,000,000	19,689,013	48,273,420	⁸ 67,962,433	---	---	---	1,149,302	⁹ 1,149,302	11 69,111,735
Total	-----	11,031,645,413	77,654,516	\$6,319,896	163,974,412	21,000	57,584	37,432	1,888,175	2,004,191	14 169,588,612

¹ Includes the basic acts plus deficiency bills plus additional amounts transferred from other emergency agencies. (Figures furnished by Mr. A. V. Keene, Bureau of the Budget.)

² Administrative expenses and medical and hospital care of injured employees paid from relief funds.

³ Administrative expenses, etc., in connection with transmittal of radiograms or emergency agencies.

⁴ Administrative expenses.

⁵ Includes expenses incident to Work Projects Administration work in office of the Chief of Staff, office of the Chief of Air Corps, office of the Quartermaster General, corps area quartermasters, office of the Assistant Secretary of War, and office of the military division, Corps of Engineers.

⁶ Allotted to Chief of Staff and administered by Assistant Chief of Staff, G-4.

⁷ This figure includes National Youth Administration.

⁸ Figures represent allotments (expenditures) for fiscal years 1936 and 1937 and authorizations for fiscal years 1938 and 1939. There may be some unexpended balances not yet reported for the fiscal year 1938 and for current fiscal year.

⁹ In addition there was available for use of the Quartermaster General, on application through this office to the Work Projects Administration, the following amounts which could have been used for administrative expenses (e.g., hire of architects, draftsmen, statisticians, clerks, etc.) the following amounts which were not used: Fiscal year 1935, \$418,892; Fiscal year 1936, \$470,586; fiscal year 1937, \$513,779; fiscal year 1938, \$1,150,040; total, \$2,553,297.

¹⁰ Includes \$416,754 administrative expenses.

¹¹ This figure includes the following amounts for Puerto Rico: Fiscal year 1937, \$355,291; fiscal year 1938, \$1,133,000; fiscal year 1939, \$901,000; total, \$2,389,291.

¹² Approximately \$8,000,000 additional for direct, Federal allotment for projects was available in the Bureau of the Budget for the War Department but it was not used.

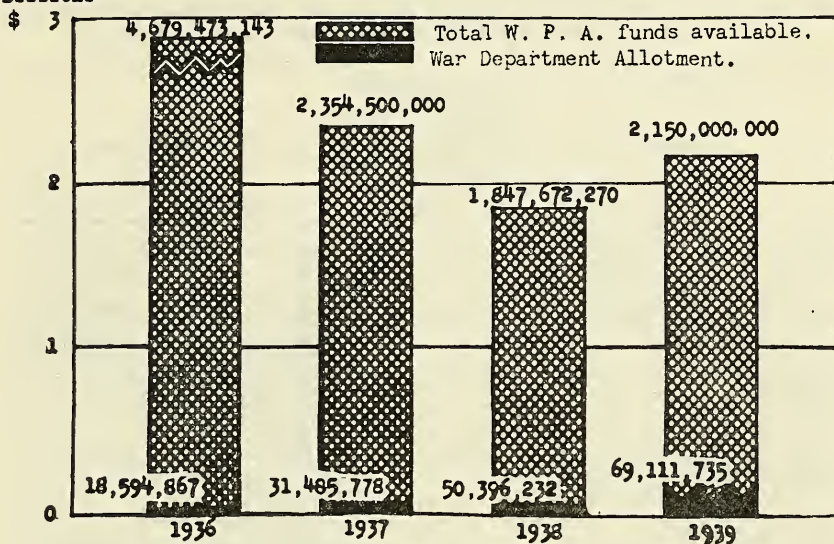
¹³ Administrative funds suballotted this fiscal year by the Quartermaster General to other offices. Of this amount \$66,315 is a special allotment to the Quartermaster General for development of plans for air depots. All available administrative funds being used.

¹⁴ In the fiscal year 1935 (Emergency Relief Administration Act of 1934), there was received from the Federal Emergency Relief Administration and the National Industrial Recovery Act (which agencies preceded the Work Projects Administration), \$5,596,227.

ARTHUR R. WILSON,

Major, General Staff, Liaison Officer for the War Department with the Work Projects Administration.

Billions



Ratio of War Department Allotments to
total W. P. A. funds.

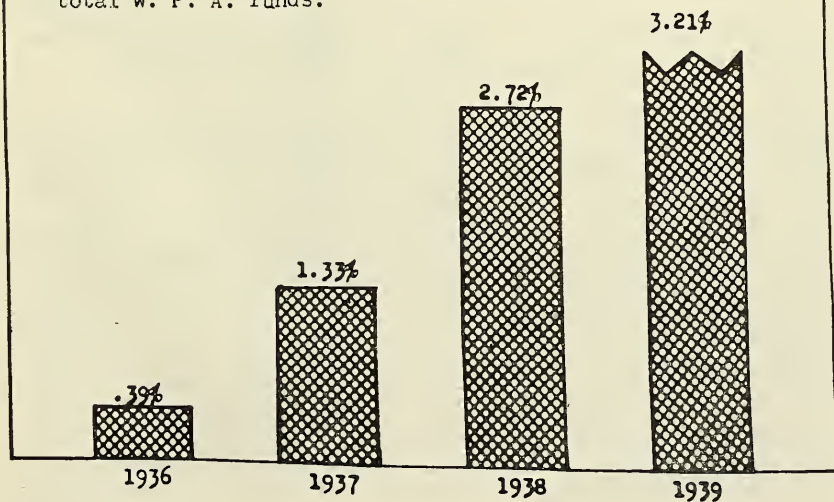


EXHIBIT No. 97

[Submitted by the Office of Production Management]

Contracts of \$10,000 and over awarded by the War and Navy Departments to designated companies, June 1, 1940, through Apr. 30, 1941

Company	Value (millions of dollars)		Principal products
	All contracts	Construction contracts only	
Allegheny Ludlum Steel Corporation.....	1.3	-----	Steel, rod, bar, and sheet.
American Can Co.....	(1)	-----	Rollers.
American Rolling Mills.....	.8	-----	Steel.
Armco International Corporation.....	(1)	-----	Pipe, culvert.
Anglo-Canadian Mining & Refining Co.....	3.2	-----	Alloy, nickel copper; forgings.
International Nickel Co.....	3.2	-----	Do.
Armstrong Cork Co.....	1.7	-----	Shells, machining; cork; bottles; brick, insulating.
Bethlehem Steel Co.....	966.8	42.8	Ships; forgings, gun and shell.
Borden Co.....	.2	-----	Milk, powdered and evaporated.
Bullard Co.....	1.1	-----	Lathes and boring mills.
Caterpillar Tractor Co.....	1.1	-----	Tractors.
Chrysler Corporation.....	94.2	20.0	Trucks and tanks.
Cincinnati Milling Machine Co.....	2.3	-----	Milling machines.
Cliffs Corporation.....	(1)	-----	Tent poles.
Colgate-Palmolive-Peet Co.....	.4	-----	Soap.
Colorado Fuel & Iron Corporation.....	4.6	-----	Forgings, shell.
Continental Can Co.....	.5	-----	Cannister parts, gas mask.
Corn Products Refining Co.....	(1)	-----	Cornstarch.
Crucible Steel Co.....	27.1	1.6	Projectiles; gun barrel forgings; shot.
Curtiss-Wright Corporation.....	409.9	-----	Airplanes; propeller assemblies.
Crown Zellerbach Corporation.....	.1	-----	Towels, paper.
Eastman Kodak Co.....	24.4	-----	Fire-control equipment; film.
Edison, Thomas A., Inc.....	.3	-----	Gages, engine; code transmitters.
Ely & Walker Dry Goods Co.....	.6	-----	Shirts and drawers.
Ford, Bacon & Davis.....	2.9	2.9	Building construction.
Forstmann Woolen Co.....	1.8	-----	Cloth.
General Electric Co.....	108.0	-----	Searchlights; radio equipment; superchargers; gun mounts and directors.
General Fireproofing Co.....	.6	-----	Chairs and shelving, aluminum.
General Motors Corporation.....	443.8	20.6	Trucks; propelling machinery; airplane engines; shells; cartridge cases; machine guns.
Chevrolet.....	34.2	-----	Trucks.
Giddings & Lewis Machine Tool Co.....	1.0	-----	Machines, boring, drilling, and milling.
Gisholt Machine Co.....	.6	-----	Lathes.
Heald Machine Co.....	.4	-----	Grinders and boring machines.
International Business Machine Corporation.....	(1)	-----	Gun parts.
International Harvester Co.....	10.2	-----	Tractors; trucks; shells.
International Shoe Co.....	7.8	-----	Shoes.
Jones-Lamson Co.....	.7	-----	Lathes and grinding machines.
Jones & Laughlin Steel Corporation.....	.3	-----	Steel pipe, bars.
Juillard, A. D. & Co.....	.6	-----	Cloth.
Kearney & Trecker Corporation.....	1.3	-----	Milling machines.
Landis Tool Co.....	.3	-----	Grinders.
LeBlond Machine Tools.....	.3	-----	Lathes.
Libbey, Owens, Ford Glass Co.....	(1)	-----	Glass, laminated.
Lukens Steel Co.....	6.5	2.2	Armor plate, forgings.
Marshall & Huchart.....	.2	-----	Boring machines.
Motch & Merryweather Machinery Co.....	.2	-----	Grinders.
Munsingwear Co.....	1.2	-----	Undershirts.
Niles-Bement-Pond Co., Pratt & Whitney Division.....	3.5	1.1	Machine tools.
Norton Co.....	.4	-----	Grinders.
Owens-Illinois Glass Co.....	.1	-----	Glass buckets.
Penney, J. C. & Co.....	.1	-----	Overalls; cotton gloves.
Pennzoil Co.....	.1	-----	Lubricating oil.
Procter & Gamble Co.....	.4	-----	Soap; shortening.
Procter & Gamble Distributing Co.....	.4	-----	Soap; shortening.
Reed-Prentice Co.....	.4	-----	Lathes, saws.
Sears-Roebuck & Co.....	(1)	-----	Brushes, combs, and razors.
Shepard, Niles Crane Hoist.....	.5	-----	Cranes.
Simmons Machine Tool Corporation.....	(1)	-----	Lathe.

¹ Less than \$50,000.

(When the name on the list is a subsidiary, the amount of contracts to the subsidiary and also the total amount of contracts to the parent company including the subsidiaries is shown.)

Contracts of \$10,000 and over awarded by the War and Navy Departments to designated companies, June 1, 1940, through Apr. 30, 1941—Continued

Company	Value (millions of dollars)		Principal products
	All contracts	Construction contracts only	
Socony-Vacuum Oil Co., Inc.-----	1.5	-----	Gas and oil.
Standard Oil Co. of Indiana-----	.1	-----	Do.
Standard Oil Co. of New Jersey-----	28.5	12.1	Do.
Stanco, Inc.-----	(¹)	-----	Petroleum.
Stedfast & Roulston Co.-----	.2	-----	Milling machines.
Stevens, J. P., & Co.-----	37.4	-----	Cloth.
Superheater Co.-----	-----	(¹)	Equipment, chemical.
Texas Co.-----	3.4	-----	Gas and oil.
Union Carbide & Carbon Corporation-----	1.9	1.1	Dry batteries, carbon, charcoa.
Carbide & Carbon Chemicals Corporation.	.2	-----	Charcoal, ether, and alcohol.
Union Oil Co. of California-----	2.3	-----	Fuel oil.
United Aircraft Corporation-----	231.9	34.2	Airplanes, airplane engines, propellers, and parts.
United States Steel Corporation-----	364.5	57.8	Ships, electric cable, steel, gun forgings.
Carnegie-Illinois Steel Corporation-----	64.2	52.3	Steel.
Van Raalte, Inc.-----	.2	-----	Mosquito netting.
Warner & Swasey-----	1.2	-----	Lathes.
Western Electric Co.-----	22.2	-----	Radio receiving sets and parts.
Westinghouse Electric & Manufacturing Co.-----	38.7	21.8	Gun equipment; blowers; metal parts, for fuzes.
White, J. G., Engineering Corporation-----	1.3	.7	Power-plant improvements.
Youngstown Sheet & Tube Co.-----	1.5	-----	Steel.

¹ Less than \$50,000.

EXHIBIT No. 98

[Submitted by John D. Biggers, Director, Division of Production, Office of Production Management]

AUGUST 5, 1940.

RECONSTRUCTION FINANCE CORPORATION,
Lafayette Building,
H Street and Vermont Avenue NW.,
Washington, D. C.

(Attention Mr. John W. Snyder.)

GENTLEMEN: As you know, the War Department has awarded to the American Bantam Car Co., Butler, Pa., the construction of 70 light reconnaissance and command cars at \$171,185.75, plus a small amount for extra equipment. These vehicles are to be delivered within 75 days.

Representatives of the War Department have advised us that it is of importance that delivery be made by October 15, 1940.

The contracting company is obligated to you under two loans, both of which are in default as to principal and/or interest payments.

May we suggest that you give them the maximum consideration you deem proper. We understand that they will petition you to defer all past due payments of principal and interest on both loans, as well as payments which will come due between this date and January 15, 1941, until that date or such later date as you deem appropriate, with such provisions, restrictions, and safeguards as you require, so long as they do not hamper the company's ability to produce the cars within the time specified by the War Department.

We hope also that you will see fit to release the \$22,500 of the company's cash in bank which has been impounded by your corporation.

We should appreciate your advising us of any action you may take in this matter.

Sincerely,

JOHN D. BIGGERS.

EXHIBIT No. 99

[Submitted by John D. Biggers, Director, Division of Production, Office of Production Management]

FEDERAL LOAN AGENCY,
Washington, August 9, 1941

Mr. JOHN D. BIGGERS,
Director, Division of Production,
Office of Production Management,
Social Security Building, Washington, D. C.

DEAR MR. BIGGERS: The R. F. C. authorized a loan to Willys-Overland Motors Co., Inc., June 1939 in the amount of \$2,500,000. The loan has been reduced to a present balance of \$2,088,658 through the agreed amortization payments, and is secured by a mortgage on the plant and equipment appraised at \$7,400,000.

February 1941 a second loan of \$1,290,000 was authorized for working capital to enable the company to manufacture 1,500 reconnaissance and command cars for the Army, this being the car popularly called Jeep. This loan is secured by an assignment of the contract with the War Department, the value of which is approximately \$1,400,000. The balance due on the loan is \$1,035,916.

We understand that 1,490 of the cars have been delivered, but payment in full has not yet been received. We regard the company as sound, and the management capable.

Sincerely yours,

JESSE H. JONES, *Administrator.*

EXHIBIT No. 100

[Submitted by John D. Biggers, Director, Division of Production, Office of Production Management]

FEDERAL LOAN AGENCY,
Washington, August 9, 1940.

Mr. JOHN D. BIGGERS,
Director, Division of Production, Office of Production Management,
Social Security Building, Washington, D. C.

DEAR MR. BIGGERS: The R. F. C. authorized a loan to American Bantam Car Co., August 1938, for \$275,000. A local bank took \$50,000 of the loan. The unpaid balance at present is \$256,960. The loan is secured by a lien on plant and equipment appraised at \$862,000.

June 1939 a second loan for \$100,000 was authorized for operating expenses. The balance due on this loan is \$7,352.

August 1940 another loan for \$125,000 was authorized to finance an order of small reconnaissance cars for the Army, and \$10,000 additional for the same purpose, November 1940. These latter loans have been paid.

December 1940 a loan of \$1,300,000 was authorized to enable the company to manufacture 1,500 reconnaissance cars for the Army. This contract has been completed and the loan paid.

June 1941 an additional loan of \$1,094,870 was authorized to enable the company to manufacture 1,000 reconnaissance cars; \$180,000 of this loan has been disbursed, and is unpaid.

The orders from the Army were secured by Mr. Harry Payne. The company contracted to pay Mr. Payne a commission of 5 percent for securing these orders from the Army. This commission was later reduced to 2½ percent. In authorizing the loan the R. F. C. did not permit any part of its loan to be used to pay the commissions due Mr. Payne for securing the orders, and called the matter of the commission contracts to the attention of the War Department.

Sincerely yours,

JESSE H. JONES, *Administrator*

EXHIBITS Nos. 101 to 110, appear in appendix to Hearings, Part 6.

EXHIBIT No. 111

SAN FRANCISCO, CALIF., AUG. 19 4 44P.

1941, AUG. 20—A. M. 8 29

GEORGE F. VANDERVEER,
Attorney, Alaska Bldg.:

Retel August 18, 12 shipyards in district covered by this office employ approximately 43,000.

A. PROBERT, T. W. I.

EXHIBIT No. 112

RO LOS ANGELES, CALIF., 19.

1941, AUG. 19—P. M. 12 16.

GEORGE F. VANDERVEER,
Attorney, Alaska Bldg.:

Eleven yards in southern California now employing approximately fifteen thousand.

W. K. HOPKINS.

[Submitted by E. L. Davis, President, Washington Nickel Mining & Alloys Co.]

EXHIBIT No. 113

The company's property may be considered as a load proposition in which an ancient iron-bearing olivine dike carries iron, manganese, chrome, and nickel in such proportions and quantity as to be commercially valuable.

The amount of ore immediately available in sight is estimated to be in excess of 500,000 tons; and the physical conditions of its setting is such that it can be mined at unusually low cost. the estimated tonnage is placed at 100,000,000 tons.

The north side has been striped for some distance, and there is two tunnels driven in some distance down at the highway, some 1,150 feet below the apex.

In the chemical composition, this ore is well suited for conversion into a steel alloy much desired for various purposes in the metal industry; and its nature is such that it can readily be smelted in the electric furnace, for which type of plant there is an abundance of low-cost power available in this region.

The property here described lies in a group of eleven claims, approximating 220 acres, and lies in the west and southern part of Chelan County, on the east side of Cascades on Blewett Pass, and State Highway Nos. 10 and 97 crosses the east end of the property, it is thirteen and a half miles to the Great Northern Railroad at Dryden, Washington.

The deposit occupies a part of an igneous area in the local bedrock, surrounded by diabase, and extends in a general direction lengthwise of the claims. Where the deposit is most extensive the ore project is high above the surface in pinnacles and cliffs; so it may easily be seen and examined.

High rugged mountain ridges with deep cuts, steeply sloping valleys characterize the general region. The highest point on the claims is 4,000 feet above sea. The claims are sparsely covered with pine timber, plenty of water for mining and milling purposes.

The ore as it occurs is in two mineral forms—Hematite and magnetite, the analysis of which are identical. The ore itself is fine-grained in texture and for most part massive in structure. Alteration of the parent rock, olivine, into serpentine shown throughout. The ore breaks easily into conchoidal shapes, and therefore can easily be mined.

In its make-up the ore here is amenable to smelting in the ordinary combustion furnace or in the electric; the latter would doubtless be the better of the two because the electric furnace product is a higher grade of steel and of greater use and value in the market, and being near the large power developments.

The reductions we have made was in an electric furnace, by using a good grade of limerock and coke as a reagent; the metal extracted is very fine grained; when polished resembles stainless steel; it is very hard, running as high as 687 Birnrel; this is controlled by the limerock.

The copies of analysis attached are a fair average of the analysis taken from the many tests. The Highest tests made was 2.33 percent nickel, 5.95 percent chromium, and 52 percent Iron.

Yours very truly,

WASHINGTON NICKEL MINING AND ALLOYS COMPANY,
E. L. DAVIS, *President*,
Cashmere, Washington.

METALLURGICAL LABORATORY

WILLIS H. OTT

ASSAYERS, METALLURGISTS, CHEMISTS

Umpire and Smelter Control. Physical and Chemical Testing

5200 Airport Way, Seattle, Washington

CERTIFICATE OF ANALYSIS

No. 532

Date: July 1, 1937

Submitted by Washington Nickel Mining and Alloys, Inc.

Ore Sample:	Percent	Ore sample—Continued.	Percent
Silica.....	14. 1	Cobalt.....	0. 15
Iron.....	45. 0	Magnesia.....	5. 4
Fe ₂ O ₃	64. 3	Sulphur.....	0. 100
Lime.....	1. 2	Arsenic.....	Trace
Alumina.....	5. 0	Copper.....	nil
Nickel.....	1. 31	Moisture.....	0. 10
Chromium.....	1. 43	Ignition loss.....	5. 5
Phosphorus.....	0. 016	Vanadium.....	Trace
Manganese.....	0. 503	Titanium.....	Trace

METALLURGICAL LABORATORY.
WILLIS H. OTT.

METALLURGICAL LABORATORY

WILLIS H. OTT

ASSAYERS, METALLURGISTS, CHEMISTS

Umpire and Smelter Control. Physical and Chemical Testing

5200 Airport Way, Seattle, Washington

CERTIFICATE OF ANALYSIS

No. 312

Date: Oct. 12, 1936.

Submitted by Washington Nickel Mining and Alloys Inc.

Sample of Pig Iron marked "36-10-8-#1 M.":

	Percent		Percent
Carbon.....	3. 71	Sulphur.....	0. 043
Silicon.....	5. 96	Chromium.....	3. 06
Manganese.....	0. 380	Nickel.....	2. 33
Phosphorus.....	0. 007	Copper.....	nil.

METALLURGICAL LABORATORY.
WILLIS H. OTT.

METALLURGICAL LABORATORY

WILLIS H. OTT

ASSAYERS, METALLURGISTS, CHEMISTS

5200 Airport Way, Seattle, Washington

Umpire and Smelter Control, Physical and Chemical Testing

CERTIFICATE OF ANALYSIS

No. 653

Date, Oct. 11, 1937.

Submitted by Washington Nickel Mining and Alloys Inc.

Iron, pig:	Percent	Iron, pig—Continued.	Percent
Carbon.....	2. 78	Nickel.....	2. 25
Silicon.....	0. 15	Cobalt.....	0. 05
Manganese.....	0. 008	Aluminum.....	Trace
Phosphorus.....	0. 013	Sulphur.....	0. 057
Chromium.....	2. 24		

This metal is so hard that it is impossible to drill a sample. The above analysis was made on grindings from an emery wheel, except for carbon. This was made on a sample drilled from the metal while red hot.

METALLURGICAL LABORATORY.
WILLIS H. OTT.

Established in 1890.
Inspecting Engineers
and Chemists.

NORTHWEST TESTING LABORATORIES,
SECOND AVENUE AND JAMES STREET,
Seattle, Washington, April 7, 1939.

Associations in Eastern U. S.
and Foreign Countries.

Ref. No. 15680.

Mr. CLARENCE H. JONES,
207 Lippy Bldg., Seattle, Washington:

We report herewith results of chemical analysis made of the sample of Washington Nickel Mining & Alloys, Inc., nickel Iron and Chromium ORE, as submitted by you:

Ore sample	Metals	Oxides	Ore sample	Metals	Oxides
	Percent	Percent		Percent	Percent
Silica (SiO ₂).....		10. 82	Chlorides.....	Trace	Trace
Iron (Fe).....	46. 90	67. 06	Sulphur (S).....	Trace	
Chromium (Cr).....	3. 03	4. 42	Zinc (Zn).....	None	
Nickel (Ni).....	1. 07	1. 37	Lead (Pd).....	None	
Manganese (Mn).....	. 64	. 96	Cobalt (Co).....	None	
Calcium (Ca).....	. 26	. 36	Gold (Au).....	Trace	
Aluminum (Al).....	5. 41	10. 34	Silver (Au).....	Trace	
Vanadium (V).....	0. 05	Trace	Platinum (Pt).....	None	
Magnesium (Mg).....	2. 80	4. 47			

Yours very truly,

NORTHWEST TESTING LABORATORIES,
(Signed) By: J. C. PRIESTLEY.

GW:S [SEAL]

A. L. GLOVER, INC.
 ASSAYERS, METALLURGISTS, ANALYSTS
 819 Third Avenue
 SEATTLE, WASHINGTON, U. S. A.

CERTIFICATE OF ASSAY

No. 31261.

Date: August 12, 1936.

The Sample of ore, from Washington Nickel Mining and Alloy Co. Marked
 “#Hematite.”

	Percent		Percent
Nickel.....	1. 09	Iron.....	51. 12
Chromium.....	1. 93	Manganese.....	nil

Respectfully submitted.

A. L. GLOVER, INC.,
 By C. E. GLOVER.

EXHIBIT No. 114

PROCEEDINGS OF A SPECIAL MEETING OF THE EXECUTIVE COMMITTEE OF THE
 MINING BUREAU OF THE ASSOCIATED CHAMBERS OF COMMERCE OF WASHINGTON,
 HELD AT ELLENSBURG, WASHINGTON, FRIDAY, MAY 9, 1941

Those in attendance were H. J. Gille, chairman of the Mining Bureau; J. I. Kinman, president of the Associated Chambers of Commerce; Joseph Daniels, professor of mining engineering, University of Washington; and D. J. Quam, Bellingham, Washington, members of the Mining Bureau Executive Committee; Professor George F. Beck, the science department, Central Washington College of Education at Ellensburg; Harry R. Herbtz and W. H. Rappuhn, president and secretary, respectively, of the Ellensburg Chamber of Commerce; and W. G. Oves, secretary-treasurer, Associated Chambers of Commerce of Washington.

Regrets of inability to attend because of previous engagements were received from F. A. DeVos, Wenatchee, and Bliss Moore, of Spokane, members of the Mining Bureau Executive Committee.

In calling the meeting to order Chairman Gille reviewed the general problem confronting the State in the field of the development of the State's mineral resources. In the face of unparalleled opportunities arising at this time because of the national-defense situation and vital considerations incident thereto, Mr. Gille emphasized the necessity of the Associated Chambers of Commerce of Washington, through its mining group, doing something at once in the way of assembling definite accurate information on Washington's natural resources. He pointed out that present available data is very sporadic and that a pressing task to be undertaken is the gathering of preliminary information over the state as a whole and presenting it in such shape as it can be reviewed and checked under state supervision before being released for publication. He called attention to the immediate demand for quartz sand with a purity of about 98% for use as a fluxing agent and enumerated other minerals for which there is a growing current need.

Public consciousness in the State must be awakened, Mr. Gille stated, based on these preliminary investigations in order that this commonwealth and its citizens may gain a widened appreciation of the opportunities ahead; may take vigorous steps to capitalize to the greatest degree all our possibilities. Large deposits that possess prospective commercial value must be indicated in these preliminary studies, with the State providing the facilities for determination, in order that prospectors and engineers may have some assurance that the deposits are worth looking into.

In studying the problem, Chairman Gille envisaged the following important factors:

1. Recognition of the fact that the mineral resources of the state are comparatively unknown.
2. A viewing of the State's mineral resources from the historical background of what has already been done.

3. The securing of appreciation of the problem by the individual chambers of commerce and commercial organizations of Washington so they will know what can be done to take the fullest advantage for their respective areas.
4. Unification of the program through cooperation and active assistance of various agencies and departments of the State.

Mr. Gille stated that the Department of Conservation and Development has agreed to publish the findings and he has been assured also of the cooperation of the Washington State Planning Council. These departments, he said, as well as the University of Washington and Washington State College have much information in unpublished form which could be made a part of the survey.

Mr. Gille also cited the following references:

Index of Mineral Occurrences by the State of Washington, published by the Secretary of State, January 1937.

Ninth Biennial Report, Department of Conservation and Development, October 1, 1936-September 30, 1938.

Tenth Annual Report, Division of Geology, Department of Conservation and Development, October 1, 1936-September 30, 1938.

There is opportunity today to get developments started even though the national defense had not intervened to give tremendous additional impetus, Mr. Gille stated. Our citizens must be stimulated to be on the lookout particularly for nonmetallic minerals, the processing of which could employ our rising production of hydroelectrical energy. Promotion work, he said, in the nonmetallics is required in the utmost degree. Minerals which the chairman cited as being of immediate interest are: limestone, dolomite, magnesite, silica, silica sand, feldspar, barite, diatomite, and the iron ores.

At this point a presentation of the project, prepared by Chairman Gille, was gone into exhaustively by the committee. The report was unanimously adopted and ordered made part of the proceedings of this meeting.

The secretary was directed to have the report published and to send copies to all chambers of commerce of the State of Washington, to chairmen of their mining committees, to all interested public and educational officials, and to the newspapers.

The meeting adjourned.

Respectfully submitted.

W. G. OVES, *Secretary.*

Since this meeting the Tenth Biennial Report of the Department of Conservation and Development, October 1, 1938-September 30, 1940, has come off the press.

ASSOCIATED CHAMBERS OF COMMERCE OF WASHINGTON,
5565 Stuart Building, Seattle, Washington.

To Mining Committees of Chambers of Commerce of the State of Washington:

STATE AREA RESTS IN VAST MINERAL BELT

GENTLEMEN: In order to visualize the great unseen empire that exists in this state, in the language of a great American, "let's have a look at the record."

It has been stated that our modern civilization rests upon a mineral basis, and without the products of the metal industry, mankind would still be plowing the ground with a sharp stick, reaping his grain with a cradle, threshing it with a wooden flail, wearing a breechcloth, and living in a skin tepee.

The State of Washington is located in the great mineral belt extending along the western part of North America from the Arctic on the north to the Isthmus of Panama on the south and on through the western part of South America. The state is a large storehouse of mineral wealth, which constitutes one of our most important resources.

It is not enough that we know that we have mineral resources in great variety and quantity, the state and public will profit only as these are put to economic use. Their systematic and orderly development is the task that lies directly before us, and will require the best efforts and wholehearted cooperation of all concerned.

THE PROBLEM

The problems that we face may be broadly stated as—

1. The bringing about of an understanding on the part of the Chambers of Commerce of the state as to what our mineral resources consist of.

2. Ascertaining of the extent of these mineral deposits.

3. The assembling of all available information regarding these resources in their particular areas, including what are known as strategic minerals, some of which are most important in our present national-defense program.

4. Cooperation with state and federal agencies so that the facts regarding these resources may be made available.

There are two fundamental reasons why our mineral resources have not been developed to any great extent in the past. First and most important is because of the fact that most of our minerals are contained in hard rock and it requires a heavy investment in plant for extraction. Second, we have had practically no laws that protected investments in mining securities. As a result, not only many mining companies were formed that sold stock to the public, but it was later found that the amount of money collected by the sale of such stock was insufficient to finance a mining plant for the economic extraction of the ore and the companies found themselves in difficulties. Besides, many mining companies were apparently organized to mine the public, as practically no part of the funds was actually invested in mining enterprise. Thus the mining industry has suffered by lack of confidence on the part of the public.

THE INDUSTRY REQUIRES PROTECTION

Fortunately, during recent years, legislation has been enacted for the purpose of protecting legitimate mining enterprise. Investment in mining, as in all industry, involves risk, but such risk should be limited to legitimate mining so that this industry may be placed in the position of honest endeavor, such as is enjoyed by all industry. With this purpose in mind, mining stock sold in this state requires that a definite percentage of the total money collected must be invested in the development of the property. Besides, sufficient information regarding the facts of the mining enterprise must be filed with the state in order to permit the sale of any stock at all. It is hoped that when this fact becomes known to the public, mining development will enjoy the confidence of legitimate mining enterprise.

During recent years, great progress has been made in developing processes of extraction, which has largely been brought about through the efforts of mining engineers, metallurgists, the Department of Mines and Mining of the University of Washington and the State College at Pullman, besides many other schools and colleges. Today scientific mining is completely built on a foundation of technology and we must look to the mining engineer, the scientist, and the trained expert for further growth and development, as out of their genius has come the new methods and new processes which are making available the extraction of many minerals which heretofore have been considered commercially unprofitable. From them also come new products and new uses for old products which are developing new industries which mean new opportunities for investment and employment.

It is one thing to develop our various minerals and quite another thing to find a use for them. It is obvious that to develop and utilize our mineral resources, in addition to manpower, it will require vast sums of new money. It is also obvious that in order to induce capital necessary for this development, capital must be protected and given an opportunity to earn a reasonable profit, for, as capital is very timid, it will seek investment only where it is protected and where the opportunity for successful enterprise exists.

MARKETS ARE VITAL FACTOR

Special consideration should be drawn to the question of marketing mineral products, particularly the special substances. The Minerals Yearbook, published by the U. S. Bureau of Mines, gives excellent reviews each year of market conditions, prices, etc. This should be in the hands of interested persons. Copies may be purchased directly from the Superintendent of Documents, Washington, D. C., at the price of \$2.00. It is always possible to see these at the various city libraries.

In addition to the foregoing, Engineering and Mining Journal gives monthly prices, and its related publication, E. & M. J. Metal and Mineral Markets, published weekly, gives up-to-date prices for most of the metals and mineral products. The Iron Age gives summaries of prices of raw and finished products of the iron and steel industry. Chemical and Metallurgical Engineering gives a very good general picture of raw and finished products that are used by the chemical industry as well as metallurgical.

Also the U. S. Bureau of Mines, Mineral Economics Division, Washington, D. C., maintains lists of producers and buyers of mineral products. For specific, accurate information, this agency is recommended.

The Mining Year Book, compiled by Walter E. Skinner, published by Financial Times, 72 Coleman St., London, E. C. 2, England, gives data on most of the important mines in the world. This is usually available at first-class libraries.

The Mines Register (price \$25.00), is also published each year in the U. S. by the Atlas Publishing Company, 133 West 21st St., New York City. This lists all the nonferrous mining companies in the western hemisphere.

Much prospecting has been done and many ore bodies have been explored to some extent, but comparatively little is known of the extent of the mineral resources which lie beneath the grass roots.

The state geologists reports the number of recorded occurrences of mineral substances as: Nonmetallic 49, and metallic 29, making a total of 78 varieties of minerals found in this state—perhaps a larger variety than any other state in the Union.

The State Division of Mines and Mining, in their biannual report, state that about 125,000 mining claims have been filed on and recorded in all parts of the state, each having been located on substantial showing of mineral. In addition, there are hundreds of coal claims and leases, several hundred prospectors' leases and mining contracts on state lands.

For many years our mineral production in this state has averaged nearly \$20,000,000 annually, with coal largely predominating until about ten years ago. In 1936 this had been increased to over \$23,000,000 and in 1937 to over \$31,000,000. In 1940 it was estimated at \$34,462,017.00. And, as yet, we have only scratched the surface.

STATE'S MINERAL OUTPUT TOPS ALASKA

We have always thought of Alaska as a great mineral treasure house and that its annual mineral production is of much importance to this state—with all of which we agree. However, it should be noted that for the eight years 1930 to 1937, inclusive, Washington produced over \$8,000,000 more in minerals than Alaska. In 1937 Alaska's production was valued at \$27,440,000—its greatest output since the World War—while Washington's production in 1937 was over \$31,000,000, or approximately \$3,500,000 in excess of Alaska.

The total gold production in Alaska since 1880 is estimated at \$636,311,000. All mineral production in Alaska since 1880 is estimated at over \$830,000,000.

It is estimated that the total mineral production of the state of Washington since its earliest settlement amounts to at least three-quarters of a billion dollars.

Leaving out of consideration coal and nonmetallics in general, the Division of Mines and Mining report that there are 120 mines in the state that can be regarded as producers, that active development is being carried on on 119, and that 88 properties are inactive for various reasons, making a total of 327 mines in this state which are either operating, developing or in various processes of formation.

REFERENCES ON STRATEGIC MINERALS

Inquiries relating to examination of prospects of strategic minerals should be addressed directly to Bureau of Mines at Washington, D. C., where they will be considered in reference to other information that the Bureau possesses.

Persons who wish to learn about government purchase of strategic minerals should write to the Procurement Division, Treasury Department, Washington, D. C., for specifications, etc., or to the Metals Reserve Company, a subsidiary of the Reconstruction Finance Corporation. The latter agency, I believe, also handles the matter of loans for development of promising mining prospects.

INDUSTRY DATES BACK TO 1833

Perhaps the first official mention of mineral resources in what is now the state of Washington was made by Dr. William Fraser Tolmie of the Hudson's Bay Company, who, in 1833, referred in a report to discoveries of coal. The first actual mining of coal was probably in 1848, when a small amount of lignite coal was dug from the banks of the Cowlitz River by Hudson's Bay Company men.

Regarding the discovery of gold in this state, there appears to be a little conflict in the records. The first geologist, in his first annual report in 1890, stated that the original discovery of gold in this state was on the Similkameen River in northern Okanogan County in 1858. But what is regarded as a more authentic account is recorded in Bulletin No. 23, Washington Geological Survey, which gives the date as during 1855, when gold was discovered near old Fort Colville. The first discovery of gold west of the Cascade Mountains is reported to have been made on Ruby Creek in 1878. Some of the first locations were made on Silver Creek in the Index district, and in the Blewett district in 1874. The first quartz lode in Okanogan County was located in 1871. The first claim staked in the Monte Cristo district, west of the Cascade Mountains, was in July 1889. The first important discovery of gold in the Mt. Baker district was in 1897.

In 1889 important discoveries of copper were made in the St. Helens district in Lewis County.

Coal mining has been an important industry in this state since 1860, in which year the production amounted to 5,374 tons. The total production in the state from 1860 to 1937 inclusive amounted to 124,476,977 tons. Some idea of the coal resources of this state is indicated by the fact that the U. S. Bureau of Mines estimate that we have approximately 63 billion tons of coal in the ground.

COOPERATING STATE AND FEDERAL AGENCIES

On November 28, 1893, the Board of Regents of the University of Washington authorized the establishment of the School of Mines, and formal instruction began in 1895. Since that time, as you well know, the College of Mines has rendered outstanding service to the mining industry of the state. The School of Mines and Geology of the Washington State College at Pullman was authorized in 1892 and a course in mining engineering was established. Like the University of Washington, it has rendered outstanding service to the mining industry.

The state and Federal agencies that now exist in this state are as follows:

U. S. Bureau of Mines have a laboratory on the University of Washington Campus and cooperate with the University College of Mines. Safety engineers and equipment are stationed there. The Bureau also has some research men at its laboratory at the State College at Pullman, where they are cooperating with the College of Mines and Geology.

The State Department of Conservation and Development at Olympia, includes, among other activities, the Division of Geology and the Division of Mines and Mining.

University of Washington, College of Mines.

State College of Washington at Pullman, College of Mines and Geology.

Eastern Washington College of Education at Cheney, Science Department.

Central Washington College of Education at Ellensburg, Science Department.

Western Washington College of Education at Bellingham, Science Department.

Washington State Planning Council.

Secretary of State's Office.

These various agencies have published a large number of reports and bulletins and have in their files a large amount of information regarding the mineral resources of this state and their present state of development.

Some idea of the effect on population movements is indicated by the fact that on June 18, 1897, the steamship *Portland* of the Pacific Steam Whaling Company arrived in Seattle bringing a ton of gold dust from the Klondike. A Seattle newspaper's reporter telegraphed New York that a ton of gold had arrived. The country was electrified by this news, headlined in most of the newspapers of the country, with the result that there was a large gold rush to Alaska. The effect of this gold rush is indicated by the increase in the population of the state of Washington for the next decade which, between 1900 and 1910, increased 120%, or from a population of 518,103 in 1900 to 1,141,990 in 1910, an increase of 623,000.

NATIONAL DEFENSE MINERALS

We are today engaged in a very large national defense program, in which certain minerals are very important. The U. S. Bureau of Mines, on page 22 of their Minerals Yearbook, 1935, give a list of mineral commodities in which the United States is wholly or partly deficient and principal foreign sources of supply, as follows:

Commodity	Principal source	Alternate source
Antimony.....	China.....	Mexico.
Asbestos.....	Canada.....	Rhodesia, Union of South Africa, U. S. S. R.
Barite ¹	Germany.....	Netherlands.
Bauxite.....	Surinam.....	British Guiana.
China Clay ¹	Great Britain.....	
Chromite.....	Rhodesia.....	Greece, New Caledonia, Cuba, Portuguese Africa, Turkey, U. S. S. R.
Fluorspar ¹	Germany.....	France, Spain.
Graphite ¹	Madagascar.....	Ceylon, Japan, Mexico.
Magnesite ¹	Austria.....	Czechoslovakia, U. S. S. R.
Manganese.....	Russia.....	Brazil, India, Gold Coast, Cuba.
Mercury.....	Spain.....	Italy.
Mica ¹	India.....	Canada, Madagascar.
Nickel.....	Canada.....	New Caledonia.
Nitrates (natural) ²	Chile.....	
Pyrites ¹	Spain.....	Canada.
Talc ¹	Italy.....	France, Canada.
Tin.....	British Malaya.....	Hong Kong, Netherlands, United Kingdom.
Tungsten.....	China.....	Bolivia, Burma.

¹ Adequate reserves exist in the United States but their location with reference to centers of consumption is advantageous or their grades are not fully adapted to our uses.

² Domestic requirements for nitrate can be met entirely by synthetic production if necessary.

As a result of the above, on June 7, 1939, Congress passed an authorization bill for the expenditure of \$100,000,000 for the purpose of acquiring strategic minerals that are not available in this country, all materials required to be picked from the Army and Munitions Board list of seventeen strategic minerals which are not at all produced or are not produced in sufficient quantity in this country. Stocks to be acquired under the contemplated program provide only a small portion of the amounts that would be necessary in time of war. The Army and Navy heads, however, attach great importance to the need for an immediate start in the purchase of at least some of these commodities. Official statements are to the effect that domestic sources would be drawn upon insofar as possible. It was pointed out, however, that the very minerals for which acquisition would be provided are those in which domestic production is only either deficient or nonexistent. It is well known that since the passage of this bill large stock piles of various minerals have been acquired.

We have in this state large deposits of substances generally referred to as war minerals. It appears that we should urge that every encouragement be given to intense research and development of these deposits of minerals so that the development of these deposits may be included in the program of our state and federal agencies in dealing with this matter. Recently the Bureau of Mines reported that the Federal Government will, under certain conditions, pay for the exploration of tungsten and chrome deposits which have the appearance of being of commercial importance. It is quite possible that other minerals may be included in this program.

If intelligent public opinion is to lead us in the right direction to develop our vast mineral resources, there must be a more general understanding of what these consist, the extent of our mineral deposits insofar as that is possible, and what the opportunities are for their commercial development. In other words, it is not possible to sell anything unless you know what you have to sell.

Therefore, it is apparent that the real problem is to find out what resources of immediate interest lie in the particular areas throughout the state and secure the cooperation of the individual Chambers of Commerce, and give us the benefit of their suggestions as to how these may be developed immediately for national

defense needs. In some instances, geologic and technologic factors or some other economic factor is retarding development.

A program to assemble the pertinent facts and to assist other agencies in listing our resources and bring them to the attention of interested persons will have accomplished something.

Any program set up should include close cooperation with existing state and federal agencies.

Points to be considered in outlining a program are:

- 1—Statement regarding mineral resources:
 - (a) Production, etc.
 - (b) Opportunities, etc.
- 2—Cooperation with—
 - (a) State Department of Conservation and Development:
 - Bureau of Mines and Mining.
 - State Geologist.
 - (b) State Planning Council.
 - (c) State University.
 - (d) State College.
 - (e) Eastern Washington College of Education, Cheney.
 - (f) Central Washington College of Education, Ellensburg.
 - (g) Western Washington College of Education, Bellingham.
 - (h) Secretary of State.
 - (i) U. S. Bureau of Mines.
 - (j) U. S. Geological Survey.
 - (k) West Coast Mineral Association.
 - (l) Northwest Mining Association.
 - (m) Prospectors and Miners Association.
- 3—Information by counties—
 - (a) List of known minerals.
 - (b) Location of principal deposits.
 - (c) Description of deposits.
 - (d) Principal ore (assay value if known).
 - (e) Ore deposits being developed.
 - (f) If being mined, give name of company.
 - (g) If not being mined, how much development has been done?
 - (h) Give as complete information as may be available so that it may be checked by a state agency.
 - (i) What are the transportation facilities?
 - (j) What mine-to-market roads are needed?
- 4—Strategic Minerals:

Tungsten and Chrome. These two metals are most important now and development of promising deposits can be financed by Federal aid.
- 5—Prospecting:
 - (a) Is much prospecting being done?
 - (b) Is there a prospectors and miners association?
 - (c) Are the fundamentals of geology and mineralogy being taught in your public schools?
- 6—Mining Laws:

(An outline of mining laws was published by the Division of Mines and Mining of the State Department of Conservation and Development July 1, 1940—compiled by M. H. Van Nuys.)
- 7—Publications:

Each member committee should have the lists of publications issued by the following:

 - (a) Biannual Reports of the Dept. of Conservation and Development.
 - (b) The bulletins of the State Geologist.
 - (c) The bulletins of the State Planning Council.
 - (d) The bulletins of the State University.
 - (e) The bulletins of the State College.
 - (f) The bulletins of the U. S. Bureau of Mines and U. S. G. S. covering: Minerals in Washington.
 - (g) Mining World (Seattle).
 - (h) Northwest Mining (Spokane).
- 8—Publicity:

Publicity should be handled on a state-wide basis by the Mining Committee of the Associated Chambers of Commerce and on a

regional basis by the individual Chambers of Commerce and commercial clubs.

The various chambers and other groups of the state interested in the development of mining can also secure valuable build-up by making a place on their programs for speakers to discuss the mineral resources of Washington. In this connection there is given herewith a list of men thoroughly informed regarding the state's mining resources, who are available to talk before various groups of this kind.

The following are from the University of Washington:

- Julian D. Barksdale, Ph. D., Assistant Professor of Geology.
- H. K. Benson, Ph. D., Professor of Chemical Engineering.
- W. L. Beuschlein, Ch. E., Professor of Chemical Engineering.
- Phil E. Church, Ph. D., Assistant Professor of Geography.
- Howard Coombs, Ph. D., Assistant Professor of Geology.
- C. R. Corey, M. S., Associate Professor of Mining and Metallurgy.
- Richard W. Crain, B. S. (M. E. & E. E.), Instructor in Mechanical Engineering.
- Joseph Daniels, E. M., Professor of Mining Engineering and Metallurgy.
- Donald H. Loughridge, Ph. D., Associate Professor of Physics.
- J. H. Mackin, Ph. D., Assistant Professor of Geology.
- C. E. Magnusson, E. E., Ph. D., Professor of Electrical Engineering; Director of Engineering Experiment Station.
- Milnor Roberts, B. A., Professor of Mining and Metallurgy; Dean, College of Mines.
- Rex J. Robinson, Ph. D., Associate Professor of Chemistry.
- Kenneth G. Skinner, M. S., Scientific Aid, U. S. Bureau of Mines.
- Robert B. Van Horn, C. E., Head, Department of Civil Engineering.
- Charles E. Weaver, Ph. D., Professor of Paleontology.
- H. F. Yancey, Ph. D., Supervising Engineer, U. S. Bureau of Mines.
- Carl H. Zwermann, Ph. D., Assistant Professor of Ceramic Engineering.

Inquiries to the State College at Pullman for information should be sent to:

- Dean A. E. Drucker, School of Mines and Geology.
- Dr. H. E. Culver, State Geologist.
- The Eastern Washington College of Education at Cheney:
- Dr. Otis W. Freeman, Professor of Geology and Geography.

The following are from the State Administration in Olympia:

- Ed. Davis, Director, Department of Conservation and Development.
- Thos. B. Hill, Supervisor, Division of Mines and Mining.
- P. Hetherton, Executive Officer, State Planning Council.
- Charlie Johns, Secretary, State Progress Commission.
- Belle Reeves, Secretary of State.

It is also felt that excellent publicity can be secured in behalf of mining, generally, and mining in Washington in particular through motion picture presentations. References are given through a catalog of motion-picture films of the Bureau of Mines. These films may be secured by any responsible person or an official of a responsible organization on a loan basis. Most of the films are silent and are of 16 and 35 mm. widths. A few of the films are sound films. The running time requires about 15 minutes for a showing. The borrower is required to pay transportation costs both ways and pay loss or damage other than ordinary wear, provide experienced operators and adhere to specified reshipping requirements.

The applications for these showings should be made to the Bureau of Mines, Northwest Experiment Station, University of Washington, University Campus, Seattle. A copy of the Bureau of Mines Motion Picture Films can be secured by writing to the Bureau at Washington, D. C., or to the Seattle headquarters.

To reach the objectives outlined in the foregoing statement the following program for your mining committee is suggested:

Obtain complete inventory of mineral resources of your county.

(a) Obtain list of mining properties of your county from Division of Mines and Mining.

(b) Add to this list any mineral deposits, both metallic and nonmetallic, in your community not on official list.

Cooperate with other communities of your county in final preparation of county inventory.

Submit all new information to Division of Mines and Mining, and copies to Chairman of Executive Mining Committee.

Get as much information as possible on minerals being used in manufacturing or construction in your community.

How many of these minerals are being, or can be, supplied by the community and the State?

Arrange for speakers from time to time to discuss the mineral resources of community and State, especially in relation to industrial development.

Carefully investigate all proposals, with respect to mineral or industrial development. Aid all legitimate promotions; expose those that are not sound.

We will appreciate hearing from you,

EXECUTIVE MINING COMMITTEE,
Prof. JOSEPH DANIELS,
F. A. DEVOS,
BLISS MOORE,
DAVID QUAM,
H. J. GILLE, *Chairman*.

EXHIBIT No. 115

AUGUST 25, 1941.

Mr. J. F. WARD,

*Division Manager, United States Department of the Interior,
Bonneville Power Administration, Seattle District Office,
Seattle, Washington.*

DEAR MR. WARD: We have had Meredith Parker in Washington, D. C., for the past two or three weeks and also in Ottawa, in connection with the Bellingham Iron and Chemical Company program. It seems that the necessary priorities required at this time for the construction of such a plant are almost impossible to obtain. We could secure the priorities for the pig-iron plant, but not for the SO₂ plant, so, therefore, the pig-iron plant would be of no value to us.

In addition to this, they have been attempting to secure from the Canadian government a guarantee that contracts made and entered into would be effective and that there would be no question about the delivery of pyrites from Britannia Beach to our plant here in Bellingham, but they state (and has been confirmed by Mr. Anderson) that they cannot secure any such guarantee, and we could not proceed with an expenditure of this kind unless all of these unknown factors are determined.

It is, therefore, with regret that we will have to forego the construction of this SO₂ plant and pig-iron plant at the present time. I am very sorry indeed to have caused you so much work and effort in connection with this project, but it is one of the things over which we have no control.

Yours very truly,

PUGET SOUND PULP AND TIMBER COMPANY,
By W. DeLONG.

EXHIBIT No. 116, appears in Hearings, Part 6, appendix, p. 1954

EXHIBIT No. 117

SEPTEMBER 5, 1941.

Honorable HARRY S. TRUMAN,

*Chairman, Special Committee Investigating Defense Contracts,
United States Senate, Washington, D. C.*

MY DEAR SENATOR TRUMAN: Accompanied by Lt. Colonel Arthur R. Wilson, of the General Staff Corps (Office, Chief of Staff), and Lt. Commander William Sihler, of the Bureau of Yards and Docks of the 13th Naval District at Seattle, I spent seven days viewing the defense establishments in Alaska, covering Sitka, Kodiak, Fairbanks, Anchorage, and Dutch Harbor. En route we also circled

and viewed Army construction of landing fields at Metlakahtla and Yukutat and C. A. A. proposed fields at Douglas Island, the Alexander Archipelago, Cold Bay, and Port Heiden on the Aleutian Islands. Senator James M. Mead and Hugh A. Fulton, Counsel for the Committee, accompanied us as far as Sitka but weather conditions necessitated their earlier return. We made the trip from Seattle to Sitka (Naval Air Station) with two Navy PBY-5 planes under the command of Commander Felix Johnson and covered all portions of the trip in the same planes except from Kodiak (Naval Air Station) to Fairbanks and Anchorage and return to Kodiak which was covered by Army plane assigned to Major General S. B. Buckner, Jr., Commander of the Alaskan Defense Forces.

The thing which gave most immediate concern in this areas was the contemplated plan of housing a substantial portion of the Army personnel in tents during most of the Alaskan winter.

This seems in flat contravention of the legislative provision that the soldiers should be adequately housed. It is difficult to conceive of an Army tent being adequate housing in the midst of an Alaskan winter.

The difficulties in housing in these remote areas have been accentuated by the large number of contractors' employees at present located in these areas and the latter have in some instances taken over Army housing.

At Kodiak for instance contractors' men are occupying barracks erected for the Army and forcing Army personnel into tents.

The contrast in accommodations was startling since 47 soldiers were placed in the same accommodations in which only 19 contractors' employees were allowed. It is believed this situation should be remedied. Also Army personnel was being used to some extent for construction in order to make as rapid progress as possible at certain points although this involved a sharp contrast between the \$15 a day received by some civilian employees as against the \$1 a day received by the Army personnel.

At Dutch Harbor the Army is keeping its personnel very busy with tactical maneuvers and it is believed this would be far better for the maintenance of morale.

This point was discussed with the authorities and assurances were given that the matter would be remedied. It is suggested, however, that a supplemental report in perhaps one month should be asked from the War Department regarding this situation.

In justice to the War Department it should be borne in mind that the construction for the Army in connection with the defense of the Naval Air Stations at Sitka, Kodiak, and Dutch Harbor is under the charge of the Naval contractor. This was probably a wise policy in order to avoid duplication of contracting facilities so far from the continental United States but does focus the problem of cooperation between the two branches of the Service and the possibility of one or the other branch being subordinated in its more pressing needs.

The Army establishments at the present time far exceeds the Navy as Navy personnel and material is awaiting the completion of facilities while the Army establishment has already moved in with a very substantial force.

This was especially conspicuous at Dutch Harbor where several thousand soldiers are stationed and are carrying out most excellent training operations and tactical maneuvers for the defense of this Naval establishment which at present consists of one commander and two yeomen.

This situation will be remedied as rapidly as the Navy personnel is able to move in.

In general there were evidences of sympathetic cooperation between the various branches of the service involved but friction is almost certain to be inevitable without unified command in remote areas.

It is believed especially vigorous measures should be taken to minimize the possibilities of friction and also to see that far more than the usual attention is given to the matter of supply, both of construction materials and also of equipment and maintenance in view of the difficulties of communication with these remote areas.

It is believed also that the maximum of authority and decentralized control should be allowed to the authorities in this area in view of the extent of the territory and the peculiar nature of the problems presented and the very long time involved in communications with the Departments so that a minimum of centralized and bureaucratic responsibilities should be here required.

There are some seemingly inexcusable failures in supply which apparently were attributable to the Seattle port of embarkation from which supplies are shipped and it is suggested that vigorous measures should be taken to remedy any failures at this point since many weeks are involved in replacements which

might well be very serious and extremely disconcerting to construction on the spot.

The Alaskan area and its present major development for defense involving approximately \$100,000,000 presents a most illuminating example of the new concept of defense as welded together by the air arm.

While historic Naval policy has been not to establish ground bases for operations other than for construction and repair the development of air power has altered this concept and the Navy is now definitely developing land-based aircraft for scouting and bombing operations although still depending upon the Army for the defense of those establishments.

It is assumed that careful study is being given to the military problem here involved where the most intimate coordination must exist between the Army, the Navy, and the Air Forces.

To the layman it would appear that possibly revolutionary changes in administration might ultimately be essential in order to integrate this entire situation.

The development of landing areas throughout Alaska and particularly in the Aleutians for fighting planes is still apparently far from adequate and surveys are still in progress which may require Congressional authorization or at least appropriation.

Tribute should be paid to the vision and vigor with which the program is being carried out in this vast area that approaches one-third the size of continental United States and is stretched over a tremendous latitude and longitude reaching almost to Japan on the west where American possessions approach within 600 miles of Japan and to Russia where only 50 miles separate the two countries.

The recent casual flight of Russian planes to the United States has revealed forcibly the air routes by Siberia or the Aleutians that could be followed by either Japan or Russia or any other European country that might control these areas.

This dramatizes the fact of how inadequate our aerial defense has been in the Alaskan area.

The energy and careful planning with which Major General S. B. Buckner, Jr., has approached this Alaskan Defense problem is very marked and his apparent grasp of the major considerations of strategy that are involved.

In these remote areas with practically no community facilities available for recreation it is peculiarly necessary that adequate recreational facilities should be provided for the comparatively large groups of men involved. At certain spots a combination theater, gymnasium, community house, and recreational hall with bowling alleys had been provided at very moderate cost and showing excellent planning. Duplications of such facilities for Army and Navy personnel in a comparatively congested spot seem questionable. It is believed that careful consideration should be given to combination of those facilities to serve all personnel involved and that vigorous attention should be given to their provision without delay.

Contrasts in accommodation and other facilities provided for Army and Navy personnel should also be avoided as far as possible by cooperation between the services involved where the personnel must live very intimately together and any sharp contrasts would inevitably be unfortunate. This applies both to officer personnel and enlisted groups.

Weather reporting in the Alaskan area is necessarily handicapped by the vast areas involved and comparatively limited settlements and would seem to require far more than ordinary attention.

For several days at a time during our recent trip it was impossible to secure weather reports from Kodiak because of inadequate transmitting facilities occasioned by climatic problems in Alaska. Only the more powerful transmitters are able to penetrate the phenomenon of Aurora Borealis. Such a situation might present a very serious problem in operations by airplanes in this area and particularly so in the event of any crisis.

Competent weather observers are also extremely important in order properly to appraise conditions in an area where the weather changes very rapidly.

Both the Naval and Military authorities in this respect are fully cognizant of this problem and it is believed that most sympathetic consideration should be given to their recommendations for development of additional facilities both for weather observing and reporting.

Development of civil airports in this region must also be considered in relation to the military problem of defense since any hostile approach to this area by air would necessarily depend upon local airports. Development of civil airports should therefore be accommodated to the military defense and be considered in relation to the possibility of their adequate defense by the military or naval planes that are likely to be available.

No particular attention was given to the details of defense contracts involved in this area since that would seem a more appropriate subject for inquiry in Washington where all of the details involved are available rather than in Alaska. The superintendents of construction in the various areas, however, representing the concern that is carrying on the major part of the construction in this area made a very favorable impression in their grasp of the problem and the vigor with which they were attacking their work under difficult conditions both as to securing materials and personnel.

Very cordially yours,

RALPH O. BREWSTER, U. S. S.

EXHIBIT No. 118

[Copy]

UNITED STATES DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
DIVISION OF POWER,
Washington, June 19, 1941.

Mr. W. L. BATT,
Office of Production Management, Washington, D. C.

DEAR MR. BATT: You have asked us to consider the possibility of supplying 90,000 kilowatts of power from Bonneville-Coulee at Longview, Washington, and 70,000 at Vancouver, Wash., where the aluminum plants of Reynolds and Alcoa are located, respectively. Several weeks ago we advised you, Mr. Holden, and Mr. Cortesi that about 162,500 kilowatts of Bonneville-Coulee power would be available for aluminum production in April 1942 provided the plants to use this power were properly located on the system. We advised you that the bulk of this power would be available only at Coulee or at Spokane, at an early date.

Your associate, Mr. Cortesi, advised Dr. Dittmer, of our staff, sometime last week, that it had been tentatively decided to place the facilities which would utilize the entire available power at one place, Spokane.

As a result of your latest request, I asked the Bonneville Power Administration to supply me with the requested information. I emphasized that this information should be supplied from a purely technical viewpoint, taking into account only engineering factors such as the possibility of transmitting the power over existing lines, necessity for new equipment such as condensers, time-schedule for obtaining new equipment, etc. I directed that any other factors, such as system-planning, vulnerability to hostile attack, etc., be eliminated. On yesterday I telephoned you the results of the studies made, and told you that I would give you our detailed answer in writing.

As we have previously advised you, a total of 162,500 kilowatts could be made available at approximately the time which your office has indicated. This is in addition to 35,000 kilowatts which, in accordance with our discussions with Mr. Holden, is reserved for magnesium. The following schedule shows when and where the 162,500 kilowatts, according to the Bonneville technicians can be made available at 110 kv., taking into account solely engineering factors (as the table indicates, the *totals* shown must be distributed among the various alternative locations shown, the possible alternatives being indicated):

[Cumulative amounts]

	Jan. 1942	April 1942	Sept. 1942	Jan. 1943
	<i>Kilowatts</i>	<i>Kilowatts</i>	<i>Kilowatts</i>	<i>Kilowatts</i>
Cascade Locks.....	65,000	65,000	65,000	65,000
Longview.....	None	None	115,000	162,500
Alcoa.....	(1)	(1)	97,500	97,500
Covington.....	65,000	65,000	65,000	162,500
Aggregate of the above <i>not to exceed</i>	65,000	65,000	115,000	162,500
Grand Coulee.....	100,000	162,500	162,500	162,500
Spokane.....	32,500	65,000	65,000	162,500
Grand total <i>not to exceed</i>	100,000	162,500	162,500	162,500

¹ It would be possible to supply 65,000 kilowatts at Alcoa at these dates, but only by taking the 220/110-kv. transformer bank now scheduled for installation at Covington and transferring it to Vancouver to serve Alcoa. This would mean that the commitment to supply the Bremerton Navy Yard would have to be cancelled, and difficulties would result in obtaining necessary power for the Yard, and possibly in supplying the City of Tacoma.

As I have told you, Secretary Ickes, the Bonneville Power Administration, and I will be very glad to have you send experts of your own selection to survey the situation at Bonneville-Coulee and to check the results of our own surveys.

It appears to us, on the basis of our studies, that the most feasible places for location of aluminum plants are:

Spokane.....	65,000 kilowatts
Cascade Locks.....	65,000 kilowatts
Covington-Tacoma.....	32,500 kilowatts
Total.....	162,500 kilowatts

This is in accord with our original recommendation made several weeks ago. If you wish to discuss this matter further or to have us make further studies, we shall be glad to do so.

Sincerely yours,

[Signed] ABE FORTAS, *Acting Director.*

EXHIBIT No. 119

AGREEMENT OF LEASE

THIS AGREEMENT, made and entered into this —— day of August, 1941, by and between Defense Plant Corporation (hereinafter referred to as "Defense Corporation"), a corporation created by Reconstruction Finance Corporation pursuant to Section 5d of the Reconstruction Finance Corporation Act, as amended, to aid the Government of the United States (hereinafter sometimes called the "Government") in its National Defense Program, and Aluminum Company of America (hereinafter called "Alcoa"), a corporation organized and doing business under the laws of the Commonwealth of Pennsylvania;

WITNESSETH:

WHEREAS, the Office of Production Management has advised that in its opinion it is necessary in the interest of national defense to establish immediately an additional plant for the manufacture of alumina, having a productive capacity of approximately four hundred million (400,000,000) pounds of alumina per year, and three aluminum-smelting plants, with aggregate productive capacity of approximately three hundred forty million (340,000,000) pounds of aluminum per year (said plants, including the sites, buildings, machinery and equipment in connection therewith, being hereinafter sometimes referred to as the "plants");

Now, THEREFORE, in consideration of the mutual covenants herein contained, it is agreed by and between the parties hereto as follows:

ONE: Alcoa agrees promptly to use its best endeavors to acquire for Defense Corporation, in fee simple, all lands necessary for the construction and operation of the aforesaid plants at sites acceptable to Defense Corporation and to this end, Alcoa may take such options and enter into such contracts in the name of and on behalf of Defense Corporation as Defense Corporation may approve. Defense Corporation will reimburse Alcoa for all cost and expenses which are approved by Defense Corporation and incurred by Alcoa in connection with the acquisition of such lands, but Alcoa shall receive no profit for such services. The title to each of said sites and the price thereof shall be satisfactory to Defense Corporation.

TWO: Alcoa agrees forthwith and from time to time to prepare, or cause to be prepared, and to submit to Defense Corporation for its approval, plans, designs, specifications, and schedules for the construction of the plants and the acquisition and installation of the machinery and equipment necessary to provide productive capacity as follows:

1. For an alumina plant in the State of Arkansas, approximately four hundred million (400,000,000) pounds of alumina per annum;
2. For an aluminum smelting plant at or near Massena, New York, approximately one hundred fifty million (150,000,000) pounds of aluminum per annum;
3. For an aluminum smelting plant adjacent to deep water in Washington or Oregon, approximately ninety million (90,000,000) pounds of aluminum per annum;
4. For an aluminum smelting plant in the State of Arkansas, approximately one hundred million (100,000,000) pounds of aluminum per annum.

Alcoa agrees, upon approval of such plans, designs, specifications, and schedules by Defense Corporation, to proceed in accordance therewith and complete as soon as practicable the construction of the plants and the acquisition and installation of the machinery and equipment necessary in connection therewith. The construction of the plants and the acquisition and installation of the machinery and equipment in connection therewith is hereinafter sometimes called the "Construction Program." With the approval of Defense Corporation, Alcoa shall have the right to make any alterations in the plans, designs, specifications and schedules approved pursuant to this paragraph Two.

THREE: In carrying out the work to be performed by it under the Construction Program, Alcoa may, with the written approval of Defense Corporation and on its behalf and in its name, employ such contractors and enter into such contracts with them as Alcoa may deem advisable.

FOUR: Defense Corporation shall advance to or reimburse Alcoa for the funds necessary for carrying out the Construction Program from time to time as the work progresses, upon requisitions of Alcoa approved by Defense Corporation. Alcoa shall be reimbursed for all salaries of officers (other than the Chairman of its Board of Directors, its President, its Vice Presidents, its Secretary, and its Treasurer) and employees engaged directly on the Construction Program, whether at said plants or elsewhere. It is also agreed that the performance of certain parts of the work on the Construction Program can be done more economically when performed by Alcoa's own organization in connection with Alcoa's other business such as joint buying, joint engineering, and other joint services; and therefore, in order to reimburse Alcoa for a proper share of such expenses which cannot be readily allocated but which are properly incurred in carrying out the Construction Program, Alcoa shall be reimbursed in an amount to be agreed upon by the parties hereto. A representative of the Defense Corporation authorized to approve requisitions on Defense Corporation's behalf shall be stationed at the site of each of the plants and at such other place or places as Alcoa may require.

FIVE: Alcoa will furnish to Defense Corporation a description of each item of machinery purchased for Defense Corporation hereunder so that it shall be capable of identification, and to the extent practicable each item shall be marked or stamped by Alcoa in a way satisfactory to Defense Corporation, so as to indicate Defense Corporation's ownership therein.

SIX: In the execution of the Construction Program, Alcoa agrees to comply with and give all stipulations and representations required by applicable Federal laws, and further agrees to require such compliances, representations, and stipulations with respect to any contract entered into by and with others under such Construction Program as may be required by applicable Federal laws.

SEVEN: It is the understanding of the parties hereto and the intention of this agreement that all work in connection with the Construction Program which is approved by Defense Corporation is to be performed at the expense of Defense Corporation and without profit to Alcoa, and Defense Corporation shall hold Alcoa harmless against any loss, expense (including expense of litigation) or damages (including liability to third persons because of death, bodily injury or property injury, or destruction, or otherwise) of any kind whatsoever, arising out of, or in connection with, the performance of the work in connection with the Construction Program, except to the extent that such loss, expense, damage or liability is due to the personal failure on the part of the corporate officers of Alcoa or of other representatives of Alcoa having supervision or direction over the Construction Program as a whole to exercise good faith or that degree of care which they normally exercise in the conduct of Alcoa's business. Alcoa may procure and maintain such public liability insurance and property damage insurance and other insurance as it may deem necessary to cover its aforesaid liability and Alcoa agrees likewise to procure and maintain such insurance for the benefit of Defense Corporation as Defense Corporation may request. The cost of such insurance shall be treated as a part of the cost of the Construction Program.

EIGHT: Title to all of the sites, buildings, machinery and equipment to be acquired hereunder shall, unless or until the same is transferred by Defense Corporation, be vested in Defense Corporation, and for the purposes of this agreement, such machinery and equipment shall remain personal property, notwithstanding the fact that it may be affixed or attached to realty.

NINE: Notwithstanding anything herein contained, the maximum amount which Defense Corporation shall be required to expend hereunder in connection with the Construction Program of the aforesaid plants shall not exceed Fifty-two Million One Hundred Thousand Dollars (\$52,100,000).

TEN: Defense Corporation hereby agrees to lease and does hereby lease all the plants to be acquired hereunder to Alcoa and Alcoa does hereby lease the same from Defense Corporation (said plants being hereinafter sometimes referred to as the "leased plants"). In the case of each plant, the lease thereof shall expire at midnight five (5) years from the date when such plant begins operations at eighty percent (80%) of its designed capacity or seven (7) years from the date of execution of this agreement, whichever is earlier. Defense Corporation and Alcoa each agrees, upon the written request of the other, to execute and deliver such additional instruments as may be necessary to carry out the provisions of this paragraph TEN. For a period of six (6) months immediately prior to the expiration of the terms of the leases for the respective plants as set forth in this paragraph TEN, each party hereto agrees, upon the request of the other, to negotiate for further extensions of the leases of each such plant upon fair and equitable terms, but upon the failure of the parties to reach an agreement within such six (6) months' period neither party shall have any further obligation to enter into further negotiation.

ELEVEN: As soon as reasonably practicable after the close of each calendar year, the net profits of each of the plants, determined in the manner set forth in Appendix A, annexed hereto and made a part hereof, shall be ascertained, and as consideration for the covenants herein contained, and as rental for the continued use and possession of the plants, Alcoa agrees to pay to Defense Corporation eighty-five percent (85%) of the net profits arising from the operations of each of the plants plus an amount equal to actual depreciation, determined separately as to each plant. Such rental shall be deemed accrued and payable as of December 31 of each calendar year and shall be paid by Alcoa to Defense Corporation as soon after such date as the amount thereof can be ascertained. In case any plant shall have run at a loss during any calendar year, Defense Corporation shall reimburse Alcoa for such part of the amount thereof as exceeds Alcoa's share of profits from such plant for the previous calendar year or years less such taxes paid or payable by Alcoa with respect to or measured by such share of profits as are not deducted as expenses under paragraph Six of Appendix A hereof. Thereafter, Defense Corporation shall be entitled to all profits resulting from the operation of such plant until such profits shall equal the amount paid by it to Alcoa to reimburse Alcoa for said loss, after which eighty-five percent (85%) of such profits shall again be paid to Defense Corporation as such rental. As used in this agreement "calendar year" means a year ending December 31 irrespective of whether or not the plant or plants in question have operated throughout such year. For the purposes of this paragraph, in determining Federal income and excess-profits taxes paid or payable by Alcoa with respect to any such share of its profits, they shall be deemed to be such part of the total amount of such income and excess-profits taxes paid or payable by Alcoa for any calendar year as Alcoa's share of profits derived from such leased plant bears to the total income upon which Alcoa has paid or is liable for such income and excess-profits taxes. For the purposes of this paragraph, in determining the other taxes paid or payable by Alcoa with respect to or measured by such profits, the same shall be apportioned as the parties may agree, and in case of their inability to agree, the apportionment shall be determined by the arbitrator selected by Defense Corporation as provided in paragraph SEVEN of Appendix A hereof.

TWELVE. Defense Corporation may furnish as much of the bauxite requirements of the leased alumina plant as it desires at such fair and reasonable price or prices as shall be agreed upon from time to time by Defense Corporation and Alcoa.

THIRTEEN. Alcoa agrees that when the alumina plant is completed, production of alumina therein shall be at such rates within its capacity and for such periods as shall be agreed upon from time to time by Defense Corporation and Alcoa. Alumina produced therein shall be transferred to the leased smelting plants to the extent of their requirements and at prices which shall be agreed upon from time to time by Defense Corporation and Alcoa and the remainder of such alumina shall be disposed of in such manner as Defense Corporation may direct, at prices to be agreed upon from time to time by Defense Corporation and Alcoa. Alcoa also agrees that when and as each of said leased smelting plants is completed, Alcoa will produce aluminum therein and production in all of said plants shall continue as herein provided. Each grade and form of aluminum produced by Alcoa in the leased smelting plants and in the owned smelting plants (the term "owned smelting plants" as used in this agreement being aluminum smelting

plants other than the leased smelting plants now, or at any time hereafter during the term of the lease owned and/or operated by Alcoa), shall be sold by Alcoa upon the same price, terms, and conditions. If, at any time, in the opinion of Defense Corporation, the price at which Alcoa is selling the aluminum produced in the leased smelting plants results in unreasonable profits from the operation thereof, after making due allowance for amortization and a fair return on the investment involved, Defense Corporation and Alcoa shall attempt to agree upon a price satisfactory to Defense Corporation and in the event of failure to agree upon such a satisfactory price, Defense Corporation shall then have the right to cancel this agreement upon six (6) months' notice in writing to Alcoa. What constitute unreasonable profits shall be in the final determination of Defense Corporation. Production in the leased and owned smelting plants shall be regulated as follows:

After the leased smelting plants shall be ready for substantially full operation (which for the purpose of this agreement shall be considered eighty percent (80%) of the capacity for which the plants were designed), the aggregate production in the leased smelting plants shall be approximately in the same proportion to the aggregate productive capacity in said plants as the aggregate production in the owned smelting plants is to the aggregate productive capacity of the said owned plants, and shall be regulated in accordance with that proportion at all times; provided, however, that if such production shall for any six (6) months' period average less than forty percent (40%) of aggregate productive capacity, either party hereto may, at its election, terminate this agreement upon sixty (60) days' written notice to the other. "Productive capacity" of any plant is defined for the purposes of this agreement as the maximum sustained production for which its units which are from time to time completed and ready for operation are designed or the maximum sustained production ever attained therein over a period of thirty (30) consecutive days, whichever is the greater. After the leased smelting plants are ready for partial operation but prior to the time when such plants shall be ready for substantially full operation, production therein shall be regulated in such manner as the parties shall agree.

Nothing contained in this agreement shall be deemed to restrict either Defense Corporation or Alcoa from at any time building new plants or making additions to plants at any time existing.

FOURTEEN: During the term of the lease of each plant, Alcoa shall procure and maintain insurance on the buildings and the equipment owned by Defense Corporation in said leased plant against fire, windstorm, and such other hazards in such companies and in such amounts as shall be satisfactory to or required by Defense Corporation. The policies evidencing such insurance shall be made payable to and delivered to Defense Corporation. In the event of loss under any of such policies, the proceeds may, upon the written request of Alcoa promptly made, be used for the repair, restoration or replacement of the property damaged or destroyed, and to that end Defense Corporation shall promptly make available to Alcoa the insurance proceeds received by Defense Corporation and any property acquired in replacement shall be the property of Defense Corporation and so identified and shall be subject to all of the terms and provisions of this agreement. Alcoa may also procure for its own benefit and maintain such insurance on any property owned by it and used in the operation of such plants as it deems advisable. Alcoa may procure and maintain such public liability insurance and property damage insurance and other insurance as it may deem necessary for its own protection and Alcoa agrees likewise to procure and maintain such other insurance for the benefit of Defense Corporation as Defense Corporation may request.

The cost of all insurance which shall be procured and maintained in connection with the Construction Program shall be treated as a part of the cost of the Construction Program and the cost of all insurance procured and maintained in connection with the operation of each plant shall be treated as an expense of operation, except that the cost of any insurance which Defense Corporation shall not agree is reasonable shall be paid for by Alcoa.

FIFTEEN: Alcoa agrees to pay to the proper authority, when and as the same become due and payable, all taxes, assessments (other than improvement assessments) and similar charges which at any time during the terms of the lease of the respective plants or any extension thereof may be taxed, assessed, or imposed

upon Defense Corporation or Alcoa with respect to or upon the plants or any part thereof, or upon the occupier thereof or upon the use thereof; and the amount thereof shall be deemed to be an expense of operation.

SIXTEEN. Alcoa will use reasonable care in the use and operation of the plants and shall keep the same in good state of repair (ordinary wear and tear and damage or destruction from causes beyond Alcoa's control excepted), and upon the expiration of the lease of each plant or any extension thereof Alcoa shall forthwith yield and place Defense Corporation in peaceful possession thereof free and clear of any liens and claims other than those resulting from claims against Defense Corporation. Any inventory, machinery, equipment, materials, supplies, or other property located in any of said plants which at such time is not the property of Defense Corporation, and which Alcoa owns or is entitled to possess, may be removed by Alcoa free and clear of any liens and claims of Defense Corporation upon or prior to the expiration of such lease or any extensions thereof.

SEVENTEEN. In carrying out the Construction Program and in the operation of any of the plants and any of the equipment to be acquired hereunder, Alcoa agrees to comply with all applicable Federal, State, municipal, and local laws and the rules, orders, regulations, and requirements of any departments and bureaus and all local ordinances and regulations, but Alcoa may contest in good faith the legality or applicability of any such laws, rules, orders, regulations, requirements, or ordinances. The provisions of this agreement are subject to any statutes which may be hereafter adopted by the Congress of the United States, and any authority exercised pursuant thereto.

EIGHTEEN. So long as this lease or any extension thereof remains in effect, Alcoa shall:

(a) Keep separate, full, and complete records, on a recognized cost-accounting basis, showing the actual cost of all sites and all items of labor, materials, equipment, supplies, services, and other expenditures of whatsoever nature for which Defense Corporation is directly obligated or for which Alcoa is entitled to reimbursement in connection with the acquisition of the sites and the Construction Program;

(b) Keep separate, full and complete records, on a recognized cost-accounting basis, showing in detail all items of income and expense and other information and data necessary for the determination of profits or losses arising out of the operation of the leased plants;

(c) Maintain separate records of shipments and invoices of all alumina produced in the alumina plant leased to Alcoa herein and of the shipments and invoices of all aluminum produced in the leased aluminum smelting plants, as well as shipments and invoices of all ingot and pig aluminum produced as the owned smelting plants;

(d) Make available to Defense Corporation for audit and inspection all of the records, information, and data referred to in subdivisions (a), (b), and (c) of this paragraph;

(e) Operate the leased plants in an efficient manner and exercise the same care therein as it uses in the operation of the owned plants, and to the end that Defense Corporation shall be assured on this point, Alcoa will, when so requested by Defense Corporation, have a certified public accountant acceptable to Defense Corporation and to Alcoa submit to Defense Corporation as soon as is convenient after the close of any year, a statement showing the variation between the average price paid for labor during said year in the owned smelting plants and in the leased smelting plants and between the average price paid for, or at which transfers were made of, alumina, power, cryolite, aluminum fluoride and carbons used in the owned smelting plants and in the leased smelting plants during said year, which six (6) items Alcoa regards as comprising approximately ninety per cent (90%) of the total mill cost of producing aluminum. In giving consideration to such variations, due weight shall be given to natural advantages and disadvantages such as freights, local labor conditions, and other conditions outside of the control of Alcoa. Such certified public accountant shall also report to Defense Corporation with respect to any other facts deemed by both Defense Corporation and Alcoa important and pertinent to a comparison of the operations in the leased plants with the operations in the owned plants;

(f) Permit Defense Corporation to inspect any of the leased plants at all reasonable times during the continuance of this lease or any extension thereof.

NINETEEN: Alcoa will not without the prior written consent of Defense Corporation sell, assign or pledge this lease or any of its rights or obligations hereunder,

or sublease or permit the use by others of any of the property covered by this lease provided, however, that nothing herein contained shall be construed as prohibiting an assignment by Alcoa of any of its rights under this agreement to a wholly owned subsidiary upon condition that Alcoa shall remain liable under this agreement for the performance by such subsidiary of Alcoa's obligations hereunder.

TWENTY: Failure of Defense Corporation or Alcoa to insist in any one or more instances upon performance of any of the terms, covenants or conditions of this agreement shall not be construed as a waiver or the relinquishment of the future performance of any such term, covenant or condition and any obligation with respect to such future performance shall continue in full force and effect.

TWENTY-ONE: The plants may be transferred and conveyed to another agency or branch of the Government upon condition that such other agency or branch of the Government shall succeed to all of the rights, powers, privileges, discretion and obligations of Defense Corporation hereunder. In the event of such transfer, Defense Corporation shall cease to have any rights, duties or obligations hereunder.

TWENTY-TWO: Notwithstanding the other provisions hereincontained, Defense Corporation by notice in writing, may cancel this agreement in the event (a) that a receiver or trustee is appointed for Alcoa or its property, or Alcoa makes an assignment for the benefit of creditors, or Alcoa becomes insolvent, or a petition is filed by or against Alcoa pursuant to the provisions of the United States Bankruptcy Act, as amended, for the purpose of adjudicating Alcoa a bankrupt, or for the reorganization of Alcoa, or for the purpose of effecting a composition or rearrangement with Alcoa's creditors, and any such petition filed against Alcoa is not dismissed within sixty (60) days; or (b) of any violation of any terms, conditions or covenants of this agreement by Alcoa, and the failure of Alcoa to cure such violation within thirty (30) days from the giving of written notice thereof by Defense Corporation to Alcoa.

TWENTY-THREE: It is the understanding of the parties hereto that contracts for the power necessary for the operation of such plants have not yet been entered into. In the event contracts satisfactory to the parties hereto for such power shall not have been entered into within ninety (90) days from the date of the execution of this agreement with respect to any such plant or plants, either party hereto reserves the right upon written notice to the other, to eliminate such plant or plants from the provisions of this agreement and in such event, the rights and obligations of the parties hereto shall be the same as if such plant or plants had not been included or mentioned in this agreement, except that Defense Corporation shall in such event reimburse Alcoa for all of its expenses, and hold Alcoa harmless from all obligations theretofore incurred by it in good faith in accordance with the provisions of this agreement with respect to such plant or plants.

TWENTY-FOUR: No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this agreement or to any benefit arising therefrom.

TWENTY-FIVE: If the performance of any of the obligations of Alcoa under this agreement is interrupted or prevented by reason of inability to obtain essential materials or the transportation thereof, or by reason of labor shortage or labor disputes, or by reason of fire, explosion, accident, sabotage, or any cause beyond Alcoa's control, whether of a similar or dissimilar nature, Alcoa shall be excused from performance hereunder while and to the extent that it is prevented from so doing by one or more of such causes, and shall renew performance as soon as practicable after such disability is removed.

TWENTY-SIX: Alcoa agrees that, upon the written request of Defense Corporation Alcoa will design, construct, and operate one or more additional alumina plants and one or more additional aluminum smelting plants upon the same terms and conditions (other than the regulation of production which shall be as the parties shall agree at the time) as are set forth herein for the designing, construction, and operation of the plants covered by the Construction Program, but Defense Corporation reserves the right to lease any one or more of such additional plants to a lessee other than Alcoa or to make such other arrangement for the operation thereof as Defense Corporation may determine.

TWENTY-SEVEN: In case Defense Corporation and Alcoa are not able to agree upon any matter (other than the determination of a satisfactory price for aluminum produced in the leased aluminum smelting plants as provided in paragraph THIRTEEN hereof) as to which their agreement is required under the terms of this agreement, such matter shall be referred to Jesse H. Jones, Federal Loan Administrator, and Arthur V. Davis, the chief executive officer of Alcoa, or such other

person as may at the time perform the functions of such respective offices, who shall determine such matter; but in case of their inability to agree, such matter shall be determined by such person as they may jointly select. Any matter determined in accordance with the provisions of this paragraph TWENTY-SEVEN shall be final and binding upon both Defense Corporation and Alcoa.

IN WITNESS WHEREOF the parties hereto have caused this agreement to be executed, and their respective corporate seals to be affixed, by their respective officers signed below, who are thereunto duly authorized.

DEFENSE PLANT CORPORATION,
By _____, *President.*

Attest:

Secretary.

Witnesses:

ALUMINUM COMPANY OF AMERICA,
By _____
Chairman of the Board of Directors.

Attest:

Secretary.

Witnesses:

DISTRICT OF COLUMBIA: ss:

On this _____ day of _____, 1941, before me appeared _____, to me personally known, who, being duly sworn, did say that he is the President of Defense Plant Corporation, a corporation organized and existing under and by virtue of the laws of the United States, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its board of directors, and said _____ acknowledged said instrument to be the free act and deed of said corporation.

In Testimony Whereof, I have hereunto set my hand and affixed my official seal this the day and year first in this, my certificate, written.

Notary Public, District of Columbia.

My commission expires _____

_____, ss:

On this _____ day of _____, 1941, before me appeared _____, to me personally known, who, being duly sworn, did say that he is the Chairman of the Board of Directors of Aluminum Company of America, a corporation organized and existing under and by virtue of the laws of the Commonwealth of Pennsylvania, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said _____ acknowledged said instrument to be the free act and deed of said corporation.

In Testimony Whereof, I have hereunto set my hand and affixed my official seal this the day and year first in this, my certificate, written.

_____, *Notary Public.*

My commission expires _____

DISTRICT OF COLUMBIA, ss:

On this _____ day of _____, 1941, before me, _____, a Notary Public duly commissioned, qualified and acting, within and for the District of Columbia appeared in person the within named _____ and _____ (being the person or persons authorized by the corporation to execute such instrument, stating their respective capacities in that behalf), to me personally well known

who stated that they were the ----- and -----
----- of Defense Plant Corporation, a corporation, and were duly author-
ized in their respective capacities to execute the foregoing instrument for and in
the name and behalf of said corporation, and further stated and acknowledged
that they had so signed, executed and delivered said foregoing instrument for
the consideration, uses and purposes therein mentioned and set forth.

In Testimony Whereof, I have hereunto set my hand and official seal this
----- day of -----, 1941.

Notary Public, District of Columbia.

My commission expires -----

----- ss:

On this ----- day of -----, 1941, before me, -----
-----, a Notary Public duly commissioned, qualified and acting,
within and for the ----- appeared in person the within
named ----- and ----- (being the
person or persons authorized by the corporation to execute such instrument,
stating their respective capacities in that behalf), to me personally well known,
who stated that they were the ----- and -----
----- of Aluminum Company of America, a corporation, and were duly
authorized in their respective capacities to execute the foregoing instrument for
and in the name and behalf of said corporation, and further stated and acknowl-
edged that they had so signed, executed and delivered said foregoing instrument
for the consideration, uses, and purposes therein mentioned and set forth.

In Testimony Whereof, I have hereunto set my hand and official seal this
----- day of -----, 1941.

-----, *Notary Public.*

My commission expires -----

DISTRICT OF COLUMBIA, ss:

On this ----- day of -----, A. D. 1941, before me
personally appeared -----, to me known who, being by
me duly sworn, did depose and say that he resides in the District of Columbia,
that he is ----- President of Defense Plant Corporation, the corporation
described in and which executed the foregoing instrument; that he knows the
corporate seal of the Defense Plant Corporation; that the seal affixed to the
foregoing instrument is the corporate seal of said corporation, and was so affixed
by order of its Board of Directors, and that by like order he signed the same as
President.

-----,
Notary Public, District of Columbia.

My commission expires -----

----- ss:

On this ----- day of -----, A. D. 1941, before me
personally appeared -----, to me known, who, being by
me duly sworn, did depose and say that he resides in the -----
that he is Chairman of the Board of Directors of Aluminum Company of America,
the corporation described in and which executed the foregoing instrument, that
he knows the corporate seal of the Aluminum Company of America; that the seal
affixed to the foregoing instrument is the corporate seal of said corporation, and
was so affixed by order of its Board of Directors, and that by like order he signed
the same as Chairman of the Board of Directors.

-----, *Notary Public.*

My commission expires -----

APPENDIX "A". METHOD OF DETERMINING PROFIT OR LOSS

ONE: Subject to the provisions hereinafter set forth, the profits or losses of each
plant shall be separately ascertained and determined in accordance with sound
accounting practices acceptable to Defense Corporation and Alcoa.

Two: To the extent that Alcoa uses in any of the leased plants any bauxite, aluminae or other products owned by Alcoa or produced in plants owned by it, the price of the same for determining profits or losses hereunder shall be such as shall be agreed upon from time to time by Defense Corporation and Alcoa.

THREE: For the purpose of determining profits of each leased smelting plant arising from the production and sale of aluminum in any year, the procedure will be as follows:

(A) The total amount in pounds of ingot (or pig) aluminum shipped from the leased and owned smelting plants in that year will be ascertained. Aluminum transferred from a smelting plant to any of Alcoa's fabricating plants will be considered as a shipment.

(B) The amount of nonallocated stock (as hereinafter determined) on hand in the leased plant at the beginning of the year plus the production in that plant in that year will be determined.

(C) The aggregate nonallocated stocks on hand at the beginning of the year in the owned and the leased smelting plants plus the production in that year of such plants plus any aluminum purchased and received by Alcoa will be determined.

(D) The percentage which the amount determined under subsection (B) hereof is of the amount determined under subsection (C) hereof will be ascertained.

(E) There will be allocated to the leased plant as the theoretical shipments from that plant for that year the same percentage of amount determined under subsection (A) hereof as was ascertained under subsection (D) hereof. The difference between the amount of this allocation and the aggregate of the nonallocated stock on hand at the beginning of the year plus the production of that plant for that year will be the nonallocated stock for that plant as of the beginning of the following year for use in making similar determinations for the following year.

(F) The production of each leased smelting plant will be put into a running inventory and carried at cost.

(G) The weighted average price obtained from Alcoa's sales to others of ingot aluminum during the year will be ascertained and the amount of shipments allocated to the leased smelting plant as determined in subsection (E) of this paragraph multiplied by this weighted average price per pound, will be considered as gross income of the leased plant for the year. This gross income as compared with the cost of the amount of aluminum (as determined by the value of aluminum in the running inventory at that time) thus allocated in accordance with subsection (E) of this paragraph will establish the amount of profit or loss of that plant for that year arising from the production and sale of aluminum. In determining the weighted average price for ingot aluminum as above, proper adjustments will be made for any lower price received for inferior grades of ingot or for pig, for any higher price received for special or unusual forms or grades of ingot and for any other pertinent factors.

(H) After the expiration of the lease or any extension thereof, shipments will continue to be allocated against the nonallocated stock on hand in the leased plant in amounts at least as great as results from the application of the procedure set forth under subsection (E) of this paragraph and eighty-five percent (85%) of the profits arising from such shipments shall be paid to Defense Corporation; but in the event a loss results from such shipments, Defense Corporation will reimburse Alcoa for such loss.

FOUR: Items of Alcoa's expenditures for overhead which can be accurately and readily distinguished as having been specifically expended in connection with the operation of the leased plants, whether expended by salesmen, buyers, engineers, auditors, etc., or for office rent, traveling, etc., even though part of the time of such employees and part of such facilities are also used in part in connection with Alcoa's own operations or own overhead, shall be included in the operating expenses of the leased plants, provided the annual aggregate of such expenditures in any calendar year does not exceed one-quarter of one cent ($\frac{1}{4}\text{c}$) per pound of aluminum produced in that year in the leased plants (in which calculation two pounds of alumina will be considered to be the same as one

pound of aluminum). In order to compensate Alcoa for such portion of its overhead as cannot thus be specifically allocated to the operation of the leased plants, Alcoa may also include as an item of operating expense the sum of one-half cent ($\frac{1}{2}\text{¢}$) per pound of aluminum produced in the leased plants (in which calculation two pounds of alumina will be considered the same as one pound of aluminum). A proper reserve shall be established for bad debts chargeable to the leased plants and the owned plants on the same basis as shipments are allocated in paragraph THREE of this Appendix A and all bad debts arising from shipments of aluminum shall be charged to such reserve, and any unused portion of such reserve shall be credited to the leased plants and the owned plants in the same proportion.

FIVE: Defense Corporation and Alcoa shall agree from time to time on the amount of working capital necessary for the operation of the leased plants, and, for the purpose of determining profits, interest shall be allowed thereon at the rate of three percent (3%) per annum. Alcoa will provide such working capital, but upon request of Defense Corporation Alcoa will borrow from Reconstruction Finance Corporation all or such part of such working capital as Reconstruction Finance Corporation will lend at an interest rate not in excess of three percent (3%) per annum.

SIX: Maintenance costs, and actual depreciation charges to the extent paid to Defense Corporation pursuant to paragraph ELEVEN of the agreement to which this schedule is annexed, shall be included in determining profits and losses, but no amortization charges shall be included in such determination. All taxes which Alcoa must pay in connection with the operation of the leased plants shall be treated as expenses, including such taxes, if any, whether Federal or State, as Alcoa may be required to pay with respect to or which are measured by the income derived from the leased plants before deducting therefrom any amounts paid to Defense Corporation for rentals as herein provided, but excluding such taxes, Federal or State, as Alcoa may be required to pay with respect to the income derived by it from the leased plants after deducting therefrom any amounts paid Defense Corporation for rentals as herein provided.

SEVEN: In case of any dispute between Defense Corporation and Alcoa with respect to the determination of the profits or losses arising from the operation of the leased plants, such dispute shall be submitted to an arbitrator selected by Defense Corporation who shall be a partner in one of the following firms of Certified Public Accountants: Collins & Company; Price, Waterhouse & Company; Lybrand, Ross Brothers & Montgomery; Haskins & Sells; Arthur Young & Company; Ernst & Ernst; or such other firm of Certified Public Accountants as may be agreed upon by Defense Corporation and Alcoa. The decision of such arbitrator shall be final and binding upon the parties and the cost of arbitration shall be treated as an expense chargeable so such plant or plants as the arbitrator shall determine.

EXHIBIT No. 120

ALUMINUM SALES CONTRACT

CONTRACT made as of the 2nd day of May 1941, between

METALS RESERVE COMPANY (hereinafter called the "Buyer"), a corporation duly created by Reconstruction Finance Corporation pursuant to Section 5d of the Reconstruction Finance Corporation Act, as amended, with its principal office at Washington, D. C., and

ALUMINUM COMPANY OF CANADA, LIMITED (hereinafter called the "Seller"), a corporation duly organized and existing under the Companies Act of the Dominion of Canada, with an office at Montreal, P. Q., Canada.

WITNESSETH:

WHEREAS the Buyer was duly organized as an Agency of the Government of the United States to assist in the National Defense Program of the latter by acquiring and producing aluminum and certain other critical and strategic materials, and has been duly authorized to acquire aluminum in accordance with the terms of this Contract; and

WHEREAS the Office of Production Management has recommended to the Buyer that it acquire approximately 170,000 tons of aluminum from the Seller; and

WHEREAS the Seller is willing to sell such quantity of aluminum to the Buyer upon the condition that the Seller receive a substantial down payment to assist it in expanding the productive capacity of its plants and facilities and upon the other terms and conditions hereinafter set forth; and

WHEREAS the Buyer is willing to purchase such quantity of aluminum from the Seller upon the terms and conditions hereinafter set forth for the use of the United States Navy or for other purposes which would permit the importation of the aluminum, duty free, or subject to refund of substantially the entire amount of the duty paid thereon, and is willing to make the down payment requested by the Seller provided that the Buyer receives a reasonable discount in the purchase price for such down payment; and

WHEREAS the President of the United States has approved the purchase by the Buyer from the Seller of approximately 170,000 tons of aluminum and the aforesaid down payment to be made by the Buyer to the Seller;

Now, THEREFORE, in consideration of the mutual promises and agreement herein contained and of other good and valuable considerations, it is hereby covenanted and agreed by and between the Buyer and Seller as follows:

1. *Definitions.*—Wherever used in this Contract—

(a) The term "aluminum" means virgin aluminum conforming to the following specifications:

Aluminum-----	99.3% minimum.
Copper-----	.1% maximum.
Iron-----	.5% maximum.
Silicon-----	.4% maximum.
Magnesium-----	.03% maximum.
Manganese-----	.03% maximum.
Zinc-----	.03% maximum.
Other elements each-----	.03% maximum.
Other elements total-----	.1% maximum.

The aluminum shall be in ingots of the Seller's standard form and shape, containing approximately 45 pounds each, and shall be of uniform quality and have a clean surface, free from dirt, slag, foreign materials or excessive dross.

(b) The term "ton" means a metric ton equal to 2,204.6 pounds.

(c) Amounts of money stated in terms of "Dollars" and "Cents" are stated in terms of lawful money of the United States.

2. *Quantity.*—The Seller hereby agrees to sell and deliver to the Buyer and the Buyer hereby agrees to purchase, receive and pay for an aggregate of 170,000 tons of aluminum at the prices and times, and upon the terms and conditions hereinafter set forth.

3. *Schedule of Deliveries.*—The said 170,000 tons of aluminum shall be delivered by the Seller to the Buyer as follows:

20,000 tons as soon as possible, but not later than May 1, 1942;

50,000 tons between May 1, 1942, and May 1, 1943, in approximately equal monthly quantities;

65,000 tons between May 1, 1943, and May 1, 1944, in approximately equal monthly quantities; and

35,000 tons between May 1, 1944, and November 1, 1944, in approximately equal monthly quantities.

4. *Delivery.*—All deliveries hereunder, except as otherwise provided below, shall be f. o. b. railroad cars at Arvida, P. Q., or Shawinigan Falls, P. Q., as the Seller may elect. Packaging and packing shall be such as to insure acceptance by common carrier for safe transportation. The Buyer shall furnish to the Seller instructions with respect to the names of consignees of the aluminum so to be delivered and, within the limitations of paragraph 3 hereof, the quantities and times of deliveries. The Seller shall use its best efforts to arrange for shipments in accordance with such instructions and to forward bills of lading, invoices, and related documents as directed by the Buyer. Upon request of the Buyer, or in default of instructions for shipment to consignees as hereinabove provided, the Seller shall store in the open at the Seller's expense and risk (other than the risk of any natural deterioration resulting from such storage) until November 1, 1944, any aluminum deliverable hereunder, and shall issue and deliver to the Buyer a Storage and Ownership Certificate in the form hereto annexed as Exhibit A, certifying the quantity and location of the aluminum so stored, which shall constitute delivery

to the Buyer for the purpose hereof. The aluminum so stored shall be released from storage at such times and in such quantities as the Buyer shall request, and shall be placed at the Seller's cost f. o. b. railroad cars at Arvida, P. Q., or Shawinigan Falls, P. Q., as the Seller may elect, in accordance with the foregoing provisions relating to delivery and shipment.

5. *Price.*—The base price of the aluminum to be delivered hereunder shall be 17¢ per pound. From such base price there shall be deducted .295¢ per pound discount for the initial down payment by the Seller in the amount of \$25,000,000 provided for in paragraph 6 hereof, which discount shall be in lieu of all other charges in respect of said down payment. The base price shall be subject to the following additional adjustments:

(a) *Delivery Costs.*—The costs of transportation of the aluminum, including customary insurance, from f. o. b. railroad cars at Arvida, P. Q., or Shawinigan Falls, P. Q., as the case may be, to the destination specified by the Buyer, in its sole discretion, shall be for the account of the Seller up to ½¢ per pound of aluminum. The Buyer shall maintain records of such costs and the Seller shall pay to the Buyer on January 15, 1942, and monthly thereafter the amount for which the Seller is obligated pursuant to the provisions of this subparagraph (a). Such payment shall be made by credit against payments due by the Buyer in respect of the purchase price for deliveries hereunder. If there shall be no such payments then due by the Buyer, the Seller shall pay the amount for which it is obligated to the Buyer in cash at New York, New York, or at Washington, D. C., as the Buyer may elect.

(b) *Production Costs.*—If the Seller's costs in respect of labor employed in the production of aluminum in Canada and ocean freight on bauxite from the sources of supply to the Seller's plants in Canada shall increase or decrease, the base price shall be adjusted as follows:

Labor.—Price, Waterhouse & Co., of Montreal, P. Q. (hereinafter called the "Auditors") shall make an independent determination of the average wage rate per hour paid by the Seller for all labor employed on an hourly basis in the production of aluminum in Canada for the six months period beginning January 1, 1941 (hereinafter called the "base period"), which rate is hereinafter referred to as the "base wage rate." The Auditors shall make a similar determination on a comparable basis for the six months period beginning July 1, 1941, and for each six months period thereafter. Such computation for any such six months period is hereinafter referred to as the "subsequent wage rate." The Auditors shall also make an independent determination of the percentage proportion that the cost of labor employed on an hourly basis by the Seller in the production of aluminum in Canada bears to the Seller's total cost of production for the six months period beginning July 1, 1941, and for each six months period thereafter. Such percentage is hereinafter referred to as the "labor percentage."

Any increase or decrease in the subsequent wage rate as compared with the base wage rate shall be used to adjust the base price in accordance with the following formula:

If there shall be an increase in the subsequent wage rate, the percentage of such increase over the base-wage rate shall be multiplied by the labor percentage for the six months period for which the subsequent wage rate shall have been determined, and the resulting percentage shall be that by which the base price shall be increased. For example, if the subsequent wage rate shall increase 10% over the base-wage rate and the labor percentage shall be 20%, the base price of 17¢ per pound shall be increased by 2% thereof, or .34¢ per pound.

Similarly, in the case of a decrease in the subsequent wage rate, the percentage of such decrease under the base-wage rate shall be multiplied by the labor percentage, and the resulting percentage shall be that by which the base price shall be decreased.

The base price as so adjusted shall be applied to all deliveries in the six months period next following that for which such adjustment shall have been determined. For example, the base price of 17¢ per pound shall apply to deliveries prior to January 1, 1942. The base price with respect to deliveries in the six months period beginning on January 1, 1942, shall be adjusted for the increase or decrease in the subsequent wage rate in the six months period immediately prior thereto in accordance with the formula set forth above.

Ocean Freight.—The Auditors shall make an independent determination of the Seller's average cost per ton of ocean freight and insurance on bauxite shipped from British Guiana to the Seller's plants in Canada for the base period. The said average cost per ton is hereinafter referred to as the "base freight rate."

The Auditors shall make a similar determination on a comparable basis for the six months period beginning July 1, 1941, and for each six months' period thereafter. The average cost per ton for any such six months' period is hereinafter referred to as the "subsequent freight rate."

The Auditors shall also make an independent determination of the percentage proportion that said average cost per ton bears to the Seller's total cost of production for the six months' period beginning July 1, 1941, and for each six months' period thereafter.

Any increase or decrease in the subsequent freight rate as compared with the base freight rate shall be used to adjust the base price in accordance with the formula set forth above with respect to the adjustment for labor costs, and the base price as so adjusted shall be applied to all deliveries in the next succeeding six months' period.

The Auditors shall furnish to the Buyer and the Seller their certificate setting forth the net adjustment in the base price after giving effect to the two adjustments hereinabove described.

The expense of making the said determinations and of obtaining the Auditors' certificate shall be paid by the Seller. In the event that the Auditors shall be unable or unwilling to act, the Buyer and the Seller shall agree upon some other mutually satisfactory chartered public accountant.

6. *Payment.*—In order to fulfill its obligations hereunder the Seller will be required to expand the productive capacity of its reduction plants and its facilities for the generation and transmission of power and the production of raw materials in Canada and elsewhere. To enable the Seller to undertake such expansion of its plants and facilities the Buyer shall, as soon as possible within fifteen days of the execution and effective delivery of this Contract, pay to the Seller at Montreal, P. Q., the sum of \$25,000,000 as a down payment to be applied on the purchase price for the aluminum to be delivered hereunder at the rate of 6.67¢ per pound. The Seller may use said down payment for such purpose or purposes as it may determine in its sole discretion, and it shall be under no duty whatsoever to account to the Buyer for the application of said down payment except as hereinafter expressly provided in this paragraph 6 and in paragraph 10 hereof. The balance of the purchase price for the aluminum to be delivered hereunder shall be paid by the Buyer to the Seller at Montreal, P. Q., as follows: On the 15th of each month the Buyer shall pay to the Seller the aggregate amount set forth in the invoices received from the Seller for the aluminum delivered during the preceding month, less the amount of any credits to which the Buyer may be entitled pursuant to the provisions of paragraphs 5 (a) and 7 hereof. Each invoice shall show the total weight and the price of the aluminum covered thereby, and shall be accompanied by (i) the Seller's Certificate of Analysis setting forth the lot numbers, cast numbers, number of pieces per cast, and weight and analysis of each cast, and (ii) copy of bill of lading or original Storage and Ownership Certificate, as the case may be; the price shall be computed at the rate of 16.705¢ per pound, as adjusted pursuant to paragraph 5 (b) hereof, less the sum of 6.67¢ per pound which shall be credited against the down payment hereinabove referred to. Upon the completion of deliveries under this Contract, the balance of said down payment not theretofore so applied shall be applied against the amount due by the Buyer in respect of the last deliveries made hereunder. The obligations of the Seller to deliver and of the Buyer to accept and pay for deliveries hereunder are subject to the conditions set forth in paragraph 13 hereof.

7. *Analysis and Weight.*—The Buyer shall have the right to have the aluminum analyzed and weighed by an analyst and weigher satisfactory to the Buyer and the Seller, in accordance with recognized commercial practice, at the point of destination specified by the Buyer, the cost of such analysis and weighing to be for the account of the Buyer. In the event that the aluminum does not conform to the specifications and requirements set forth in paragraph 1 (a) hereof, the Buyer may reject the same, and the Seller shall forthwith deliver to the Buyer an equal quantity of aluminum conforming to said specifications and requirements, the cost of effecting such substitution at the point of destination to be for the account of the Seller. The Buyer shall hold the rejected aluminum for the account and risk of the Seller, pending the receipt of instructions from the latter. If the Buyer shall elect to have the aluminum weighed, counting and weighing of ingots shall be effected upon arrival of the aluminum at the point of destination, and the Seller shall not be liable for any shortage in the number of ingots set forth in the bill of lading. If the weight so determined, after due allowance for any shortage in the number of ingots, shall be less than that stated in the Seller's

weight certificate by more than one-tenth of one percent, the purchase price value of such shortage in weight shall be credited against the payments due by the Buyer in respect of the purchase price for deliveries hereunder.

8. *Title*.—Title to the aluminum to be delivered hereunder shall pass to the Buyer upon the issuance of railroad bill of lading made out in accordance with the Buyer's instructions covering the aluminum on railroad cars at Arvida, P. Q., or Shawinigan Falls, P. Q., or upon the issuance in favor of the Buyer of the Seller's Storage and Ownership Certificate, as the case may be. Said documents shall be delivered in accordance with instructions of the Buyer.

9. *Export and Import Taxes*.—United States import tax (duty), if any, on the aluminum shall be for the account of the Buyer. Export tax (duty), if any, imposed by the Dominion of Canada or any political subdivision thereof on the aluminum shall be for the account of the Seller.

10. *Cancellation*.—The Buyer may cancel this Contract, effective at any time after the delivery and purchase of 20,000 tons of aluminum hereunder, upon giving thirty days' written notice to the Seller. In the event of such cancellation the Buyer shall credit as of the effective date of such cancellation against the unapplied balance of the \$25,000,000 down-payment provided for in paragraph 6 hereof a sum equal to 5.67¢ per pound of aluminum which shall not have been delivered at such date. The Seller shall, within thirty days of the effective date of cancellation, pay to the Buyer in cash at New York, New York, or Washington, D. C., as the Buyer may elect, the unapplied balance of such down payment after giving effect to such credit and to the amounts theretofore credited pursuant to the provisions of said paragraph 6.

In addition to the right to cancel this Contract upon the terms and conditions hereinabove set forth, the Buyer may cancel this Contract at any time in the event of (a) an adjudication that the Seller is insolvent or bankrupt, the appointment of a Receiver for the Seller or its property, or the making by the Seller of an assignment for the benefit of creditors, (b) the liquidation or dissolution of the Seller, whether voluntary or involuntary, or (c) any default by the Seller in the performance of any of the terms or conditions of this Contract, except under the conditions set forth in paragraph 13 hereof, and the continuance of such default for a period of thirty days after the giving of written notice thereof by the Buyer to the Seller. In any such event, the Seller shall pay to the Buyer within sixty days of the date of such cancellation in cash at New York, New York, or Washington, D. C., as the Buyer may elect, the unapplied balance of the \$25,000,000 down payment provided for in paragraph 6 hereof, after giving effect to the amounts theretofore credited pursuant to the provisions of said paragraph 6.

11. *Assignment*.—The Seller shall not transfer, assign, pledge, or otherwise dispose of this Contract, or of any interest or right of the Seller herein, without the written consent of the Buyer.

12. *Waiver*.—The failure of the Buyer or the Seller to insist, in any one or more instances, upon the performance of any of the terms or conditions hereof shall not be construed as a waiver or relinquishment of the right to insist upon the future performance of any such term or condition.

13. *Force Majeure*.—Neither the Buyer nor the Seller shall be responsible for delays, failures, or omissions due to any cause or causes beyond its control, however arising, and which cannot be overcome by due diligence, including, without limiting the generality of the foregoing, the inability of the Seller to obtain steamers or other vessels of a capacity sufficient to transport the raw materials required by the Seller for the production of the aluminum to be delivered hereunder and the inability of the Buyer to effect the exportation of the aluminum from Canada to the United States. Upon the cessation or rectification of the cause or causes delaying performance hereunder, each date specified in this Contract for the performance of any of the terms or conditions hereof shall be extended by the number of days during which performance was so delayed and, except as so amended, this Contract shall be performed in the same manner and to the same extent as if performance hereunder had not been suspended.

If for any cause beyond its control the Seller shall be unable to produce sufficient aluminum to fulfill all of the contracts theretofore made by the Seller for the delivery of aluminum, the Seller shall, insofar as it may be permitted so to do, deliver to the Buyer such proportion of its total production as the then monthly quantity of aluminum to be delivered hereunder shall bear to the monthly quantity to be delivered under all of the Seller's contracts. In the event of such partial suspension of performance hereunder, each date specified in this Contract shall be extended by such period of time as may be necessary to permit the Seller to complete the aggregate deliveries of aluminum to be made hereunder.

14. *Status of Seller.*—The Seller hereby warrants and represents that in the making of this Contract it is not acting in any manner whatsoever for or on behalf of the government of any state or dominion, or of any political subdivision thereof.

15. *Statutory Provisions.*—It is not practicable for the Buyer to require payments hereunder to be used for the purchase of raw or manufactured agricultural commodities to be exported from the United States.

No member of or delegate to the Congress of the United States shall be admitted to any share or part of this Contract, or to any benefit arising therefrom, but this provision shall not be constructed to extend to this Contract insofar as it is made with a corporation for its general benefit.

16. *Notice.*—Any notice hereunder to the Seller shall be sufficient if given to it in writing at 1700 Sun Life Building, Montreal, P. Q., and any notice hereunder to the Buyer shall be sufficient if given to it in writing at Lafayette Building, 811 Vermont Avenue, NW., Washington, D. C., or to such other address as either party may hereafter specify to the other in writing.

IN WITNESS WHEREOF, METALS RESERVE COMPANY has caused this Contract to be executed in its corporate name by its officers thereunto duly authorized and its corporate seal to be hereunto affixed at Washington, D. C., and ALUMINUM COMPANY OF CANADA, LIMITED has caused this Contract to be executed in its corporate name by its officers thereunto duly authorized and its corporate seal to be hereunto affixed at Montreal, P. Q., all as of the day and year first above written.

METALS RESERVE COMPANY,
BY /s/ CHARLES B. HENDERSON, *President*,

Attest:
[CORPORATE SEAL]

/s/ G. R. COOKSEY, *Secretary*.
ALUMINUM COMPANY OF CANADA, LIMITED,
BY /s/ R. E. POWELL, *President*.

Attest:
[CORPORATE SEAL]

/s/ H. R. WAKE, *Secretary*.

EXHIBIT A. STORAGE AND OWNERSHIP CERTIFICATE OF ALUMINUM COMPANY OF CANADA, LIMITED

Certificate No. -----

-----, (Place) (Date)

The undersigned Company hereby certifies that it has received and holds in storage at -----
(Describe location of storage)

for Metals Reserve Company, Washington, D. C., ----- pounds of virgin Aluminum Ingot of 99.3% guaranteed minimum purity, conforming to the specifications and requirements of the Contract made as of May 2, 1941, between Aluminum Company of Canada, Limited, and Metals Reserve Company, and described as follows:

Lot Nos. ----- Pieces ----- Pounds -----
and that said aluminum is owned by Metals Reserve Company and will be stored and shipped in accordance with the aforesaid Contract.

ALUMINUM COMPANY OF CANADA, LIMITED,

Authorized Officer

EXHIBIT No. 121

ALUMINUM SALES CONTRACT

(No. 2)

CONTRACT made as of the 15th day of July, 1941, between

METALS RESERVE COMPANY (hereinafter called the Buyer), a corporation duly created by Reconstruction Finance Corporation pursuant to Section 5d of the Reconstruction Finance Corporation Act, as amended, with its principal office at Washington, D. C.,

ALUMINUM COMPANY OF CANADA, LIMITED (hereinafter called the Seller), a corporation duly organized and existing under The Companies' Act of the Dominion of Canada, with an office at Montreal, P. Q., Canada, and

EXPORT-IMPORT BANK OF WASHINGTON (hereinafter called the Bank), an agency of the Government of the United States, with its principal office at Washington, D. C.

WITNESSETH:

WHEREAS, the Buyer was duly organized as an Agency of the Government of the United States to assist in the National Defense Program of the latter by acquiring and producing aluminum and certain other critical and strategic materials, and has been duly authorized to acquire aluminum in accordance with the terms of this Contract; and

WHEREAS, the Office of Production Management has recommended to the Buyer that it acquire approximately 170,000 tons of aluminum from the Seller in addition to that heretofore purchased by the Buyer from the Seller; and

WHEREAS, the Buyer is willing to purchase such quantity of aluminum from the Seller upon the terms and conditions hereinafter set forth for the use of the United States Navy or for other purposes which would permit the importation of the aluminum, duty free, or subject to refund of substantially the entire amount of the duty paid thereon; and

WHEREAS, the Seller is willing to sell such quantity of aluminum to the Buyer upon the condition that the Seller shall obtain a loan to enable it to expand the productive capacity of its plants and facilities and upon the other terms and conditions hereinafter set forth; and

WHEREAS, the Buyer and the Seller have requested the Bank to make a loan to the Seller in an amount not exceeding \$25,000,000 for the purpose of enabling the Seller to expand the productive capacity of its plants and facilities; and

WHEREAS, the making of such loan will increase exports and imports and facilitate the exchange of commodities between the United States and Canada;

Now, THEREFORE, in consideration of the mutual promises and agreements herein contained and of other good and valuable considerations, it is hereby covenanted and agreed by and between the parties hereto as follows:

1. *Definitions.*—Wherever used in this Contract—

(a) The term "aluminum" means virgin aluminum conforming to the following specifications:

Aluminum-----	99.3% minimum
Copper-----	.1% maximum
Iron-----	.5% maximum
Silicon-----	.4% maximum
Magnesium-----	.03% maximum
Manganese-----	.03% maximum
Zinc-----	.03% maximum
Other elements, each-----	.03% maximum
Other elements, total-----	.1% maximum

The aluminum shall be ingots of the Seller's standard form and shape, containing approximately 45 pounds each, and shall be of uniform quality and have a clean surface, free from dirt, slag, foreign materials, or excessive dross.

(b) The term "ton" means a metric ton equal to 2,204.6 pounds.

(c) Amounts of money stated in terms of "Dollars" and "Cents" are stated in terms of lawful money of the United States.

2. *Quantity.*—The Seller hereby agrees to sell and deliver to the Buyer and the Buyer hereby agrees to purchase, receive, and pay for an aggregate of 170,000 tons of aluminum at the prices and times, and upon the terms and conditions hereinafter set forth.

3. *Schedule of Deliveries.*—The Seller will deliver said 170,000 tons of aluminum as soon as possible and not later than December 31, 1944, subject to the terms of paragraph 14 hereof. The Seller estimates that deliveries can be made to the Buyer as follows:

Not less than 23,000 nor more than 43,000 tons in the calendar year 1942;

Not less than 50,000 nor more than 60,000 tons in the calendar year 1943; and

The undelivered balance in the calendar year 1944.

All deliveries of aluminum up to 20,000 tons made by the Seller to the Buyer prior to May 1, 1942, shall be deemed to have been made under the contract, dated as of May 2, 1941, between the Buyer and the Seller. Deliveries in each month after May 1, 1942, shall be deemed to have been made under said contract up to the amount specified therein for delivery in such month (including any amount specified for delivery prior thereto and not so delivered).

4. *Delivery.*—All deliveries hereunder, except as otherwise provided below, shall be f. o. b. railroad cars at Arvida, P. Q., or Shawinigan Falls, P. Q., as the

Seller may elect. Packaging and packing shall be such as to insure acceptance by common carrier for safe transportation. The Seller shall advise the Buyer weekly of the quantity of aluminum available for delivery hereunder, and the Buyer shall furnish to the Seller instructions with respect to the names of consignees of the aluminum so to be delivered and the quantities and times of deliveries. The Seller shall use its best efforts to arrange for shipments in accordance with such instructions and to forward bills of lading, invoices, and related documents as directed by the Buyer. Upon request of the Buyer, or in default of instructions for shipment to consignees as hereinabove provided, the Seller shall store in the open at the Seller's expense and risk (other than the risk of any natural deterioration resulting from such storage) any aluminum deliverable hereunder, and shall issue and deliver to the Buyer a Storage and Ownership Certificate in the form hereto annexed as Exhibit A certifying the quantity and location of the aluminum so stored, which shall constitute delivery to the Buyer for the purposes hereof. The aluminum so stored shall be released from storage at such times and in such quantities as the Buyer shall request, but not later than six months after the completion of deliveries hereunder, and shall be placed at the Seller's cost f. o. b. railroad cars at Arvida, P. Q., or Shawinigan Falls, P. Q., as the Seller may elect, in accordance with the foregoing provisions relating to delivery and shipment.

5. *Price.*—The base price of the aluminum to be delivered hereunder shall be 17¢ per pound and shall be subject to the following adjustments:

(a) *Transportation Costs.*—The costs of transportation of the aluminum, including customary insurance, from f. o. b. railroad cars at Arvida, P. Q., or Shawinigan Falls, P. Q., as the case may be, to the destination specified by the Buyer, in its sole discretion, shall be for the account of the Seller up to ½¢ per pound of aluminum. The Buyer shall maintain records of such costs and the Seller shall pay to the Buyer on the 15th day of each month the amount for which the Seller is obligated pursuant to the provisions of this subparagraph (a). Such payment shall be made by credit against payments due by the Buyer in respect of the purchase price for deliveries hereunder. If there shall be no such payments then due by the Buyer, the Seller shall pay the amount for which it is obligated to the Buyer in cash at New York, New York, or at Washington, D. C., as the Buyer may elect.

(b) *Production Costs.*—If the Seller's costs in respect of labor employed in the production of aluminum in Canada and ocean freight on bauxite from the sources of supply to the Seller's plants in Canada shall increase or decrease, the base price shall be adjusted as follows:

Labor.—Price, Waterhouse & Co., of Montreal, P. Q. (hereinafter called the Auditors), shall make an independent determination of the average wage rate per hour paid by the Seller for all labor employed on an hourly basis in the production of aluminum in Canada for the six months' period beginning January 1, 1941 (hereinafter called the base period), which rate is hereinafter referred to as the base wage rate. The Auditors shall make a similar determination on a comparable basis for the six months' period beginning July 1, 1941, and for each six months' period thereafter. Such computation for any such six months' period is hereinafter referred to as the subsequent wage rate. The Auditors shall also make an independent determination of the percentage proportion that the cost of labor employed on an hourly basis by the Seller in the production of aluminum in Canada bears to the Seller's total cost of production for the six months' period beginning July 1, 1941, and for each six months' period thereafter. Such percentage is hereinafter referred to as the labor percentage.

Any increase or decrease in the subsequent wage rate as compared with the base wage rate shall be used to adjust the base price in accordance with the following formula:

If there shall be an increase in the subsequent wage rate, the percentage of such increase over the base wage rate shall be multiplied by the labor percentage for the six months' period for which the subsequent wage rate shall have been determined, and the resulting percentage shall be that by which the base price shall be increased. For example, if the subsequent wage rate shall increase 10% over the base wage rate and the labor percentage shall be 20%, the base price of 17¢ per pound shall be increased by 2% thereof, or .34¢ per pound.

Similarly, in the case of a decrease in the subsequent wage rate, the percentage of such decrease under the base wage rate shall be multiplied by the labor percentage, and the resulting percentages shall be that by which the base price shall be decreased.

The base price as so adjusted shall be applied to all deliveries in the six months' period next following that for which such adjustment shall have been determined. For example, the base price with respect to deliveries in the six months' period beginning on January 1, 1942, shall be adjusted for the increase or decrease in the subsequent wage rate in the six months' period immediately prior thereto in accordance with the formula set forth above.

Ocean Freight.—The Auditors shall make an independent determination of the Seller's average cost per ton of ocean freight and insurance on bauxite shipped from British Guiana to the Seller's plants in Canada for the base period. The said average cost per ton is hereinafter referred to as the base freight rate. The Auditors shall make a similar determination on a comparable basis for the six months' period beginning July 1, 1941, and for each six months' period thereafter. The average cost per ton for any such six months' period is hereinafter referred to as the subsequent freight rate.

The Auditors shall also make an independent determination of the percentage proportion that said average cost per ton bears to the Seller's total cost of production for the six months' period beginning July 1, 1941, and for each six months' period thereafter.

Any increase or decrease in the subsequent freight rate as compared with the base freight rate shall be used to adjust the base price in accordance with the formula set forth above with respect to the adjustment for labor costs, and the base price as so adjusted shall be applied to all deliveries in the next succeeding six months' period.

The Auditors shall furnish to the Buyer and the Seller their certificate setting forth the net adjustment in the base price after giving effect to the two adjustments hereinabove described.

The expense of making the said determinations and of obtaining the Auditors' certificate shall be paid by the Seller. In the event that the Auditors shall be unable or unwilling to act, the Buyer and the Seller shall agree upon some other mutually satisfactory chartered public accountant.

6. *Payment.*—The purchase price for the aluminum to be delivered hereunder shall be paid by the Buyer to the Seller at Montreal, P. Q., as follows: On the 15th day of each month the Buyer shall pay to the Seller the aggregate amount set forth in the invoices received from the Seller for the aluminum delivered hereunder during the preceding month, less (i) the amount of any credits to which the Buyer may be entitled pursuant to the provisions of paragraphs 5 (a) and 8 hereof, and (ii) the amount of any payment concurrently made by the Buyer to the Bank for the account of the Seller pursuant to the provisions of paragraph 7 hereof. Each invoice shall show the total weight and the price of the aluminum covered thereby, and shall be accompanied by (i) the Seller's Certificate of Analysis setting forth the lot numbers, cast numbers, number of pieces per cast, and weight and analysis of each cast, and (ii) copy of bill of lading or original Storage and Ownership Certificate, as the case may be. The price shall be computed at the rate of 17¢ per pound, as adjusted pursuant to the provisions of paragraph 5 (b) hereof. The obligations of the Seller to deliver and of the Buyer to accept and pay for deliveries hereunder are subject to the conditions set forth in paragraph 14 hereof.

7. *Loan to Seller.*—The Bank will make a loan to the Seller upon the terms and conditions hereinafter set forth.

(a) The Bank will, upon the request of the Seller, lend to the Seller on or before July 15, 1942, the aggregate sum of \$25,000,000 to be evidenced by a note or notes of the Seller in substantially the form hereto annexed as Exhibit B. The said loan shall be made in one sum or, at the option of the Seller, from time to time in installments which shall in each case be in amounts of \$1,000,000 or a multiple thereof. The expressed maturity date of the loan shall be January 15, 1946, but such date may be extended as hereinafter provided in paragraph 14 hereof. The loan may be prepaid in whole or in part at any time and from time to time and shall be prepaid to the extent and at the times provided for in subparagraph (b) hereof. The loan shall bear interest at the rate of 3% per annum on the balance thereof from time to time remaining unpaid, payable on the 15th day of January in each year as hereinafter provided in subparagraph (c) hereof.

(b) On the 15th day of the month next following the first month in which deliveries shall be made hereunder and on the 15th day of each month thereafter until the principal of the loan shall have been paid in full and the Bank shall have so advised the Buyer, the Buyer shall deliver to the Bank a certificate setting

forth the amount, if any, of the deliveries hereunder during the preceding month and shall pay to the Bank for the account of the Seller a sum equal to 6.67¢ per pound of aluminum so delivered. The Bank shall apply such payments in reduction of the principal of the loan. Upon the completion of deliveries hereunder, the Buyer shall pay to the Bank for the account of the Seller, from the amount due by the Buyer in respect of the last deliveries made hereunder, the balance, if any, of the loan then remaining unpaid.

(c) The Seller shall pay to the Bank on January 15, 1942, the interest on the loan accrued and unpaid to such date. On the 15th day of each January thereafter until the principal of and interest on the loan shall have been paid in full and the Bank shall have so advised the Buyer, the Buyer shall, in addition to any payment made pursuant to the provisions of subparagraph (b) hereof, pay to the Bank for the account of the Seller the interest on the loan accrued and unpaid to such date. The Buyer shall in no event be required to make any such payment except to the extent that the amount then due by the Buyer to the Seller in respect of deliveries hereunder, after giving effect to the payment concurrently made by the Buyer to the Bank for the account of the Seller pursuant to the provisions of subparagraph (b) hereof, shall be sufficient for such purpose. If on any interest payment date the amount so due by the Buyer to the Seller shall be insufficient to pay the whole of the interest then accrued and unpaid, the balance thereof shall be paid to the Bank on or before the 15th day of the following April either (i) by the Buyer for the account of the Seller to the extent that the amount or amounts due in respect of deliveries hereunder shall be available for such purpose, or (ii) by the Seller. No interest shall be payable in respect of any installment of interest which shall be paid on or before the 15th day of April next following the interest payment date. Upon the completion of deliveries hereunder, the Buyer shall pay to the Bank for the account of the Seller, from the amount due by the Buyer in respect of the last deliveries made hereunder, the balance, if any, of the interest on the loan then accrued and unpaid.

(d) In the event that the Buyer shall fail or refuse, except under the conditions set forth in paragraph 14 hereof, to make any payment or payments demanded by the Seller in respect of the purchase price of aluminum delivered hereunder within sixty days after the Seller shall have made written demand therefor and such failure or refusal shall thereafter be finally adjudged by a court of competent jurisdiction to have constituted a default hereunder, the Buyer shall, unless such default shall have been cured prior to thirty days after such adjudication, pay to the Bank for the account of the Seller the balance of the loan then remaining unpaid together with interest thereon accrued to the date of payment.

(e) If and to the extent that the Buyer shall become obligated hereunder to make any payment to the Bank for the account of the Seller in respect of the principal of or interest on the loan, the obligation of the Seller in respect of the loan and the note or notes evidencing the same shall be reduced by the amount of the payment or payments for which the Buyer shall become so obligated, whether or not such payment or payments shall be made, and the Bank shall look solely to the Buyer for such payment or payments: *Provided, however*, That in the event the obligation of the Buyer to make payment to the Bank results from the exercise of Buyer's right of cancellation as provided in paragraph 11 hereof or from Buyer's failure to cure any adjudicated default as provided in paragraph 7 (d) hereof, the obligation of the Seller to the Bank in respect to the loan and the note or notes evidencing the same shall continue unless and until the Bank shall have received from the Seller notice in writing of such cancellation or failure by the Buyer.

8. *Analysis and Weight.*—The Buyer shall have the right to have the aluminum analyzed and weighed by an analyst and weigher satisfactory to the Buyer and the Seller, in accordance with recognized commercial practice, at the point of destination specified by the Buyer, the cost of such analysis and weighing to be for the account of the Buyer. In the event that the aluminum does not conform to the specifications and requirements set forth in paragraph 1 (a) hereof, the Buyer may reject the same, and the Seller shall forthwith deliver to the Buyer an equal quantity of aluminum conforming to said specifications and requirements, the cost of effecting such substitution at the point of destination to be for the account of the Seller. The Buyer shall hold the rejected aluminum for the account and risk of the Seller, pending the receipt of instructions from the latter. If the Buyer shall elect to have the aluminum weighed, counting and weighing of ingots shall be effected upon arrival of the aluminum at the point of destination, and the Seller shall not be liable for any shortage in the number of ingots set forth

in the bill of lading. If the weight so determined, after due allowance for any shortage in the number of ingots, shall be less than that stated in the Seller's weight certificate by more than one-tenth of one percent, the purchase price value of such shortage in weight shall be credited against the payments due by the Buyer in respect of the purchase price for deliveries hereunder.

9. *Title.*—Title to the aluminum to be delivered hereunder shall pass to the Buyer upon the issuance of railroad bill of lading made out in accordance with the Buyer's instructions covering the aluminum on railroad cars at Arvida, P. Q., or Shawinigan Falls, P. Q., or upon the issuance in favor of the Buyer of the Seller's Storage and Ownership Certificate, as the case may be. Said documents shall be delivered in accordance with instructions of the Buyer.

10. *Export and Import Taxes.*—United States import tax (duty), if any, on the aluminum shall be for the account of the Buyer. Export tax (duty), if any, imposed by the Dominion of Canada or any political subdivision thereof on the aluminum shall be for the account of the Seller.

11. *Cancellation.*—The Buyer may cancel this Contract, effective at any time, regardless of Buyer's default hereunder, on or after the delivery and purchase of 40,000 tons of aluminum hereunder or January 1, 1943, whichever shall be the earlier, upon giving thirty days' written notice to the Seller. In the event of such cancellation the Buyer shall pay to the Bank for the account of the Seller a sum equal to 5.67¢ per pound of aluminum which shall not have been delivered at the effective date of cancellation, and the Bank shall apply such payment in reduction of the principal of the loan.

In addition to the right to cancel this Contract upon the terms and conditions hereinabove set forth, the Buyer may cancel this Contract at any time in the event of (a) an adjudication that the Seller is insolvent or bankrupt, the appointment of a Receiver for the Seller or its property, or the making by the Seller of an assignment for the benefit of creditors, (b) the liquidation or dissolution of the Seller, whether voluntary or involuntary, or (c) any default by the Seller in the performance of any of the terms or conditions of this Contract, except under the conditions set forth in paragraph 14 hereof, and the continuance of such default for a period of thirty days after the giving of written notice thereof by the Buyer to the Seller. In any such event, the loan and the note or notes evidencing the same shall become due and payable on the date of such cancellation.

12. *Assignment.*—The Seller shall not transfer, assign, pledge, or otherwise dispose of this Contract, or of any interest or right of the Seller herein, without the written consent of the Buyer and the Bank.

13. *Waiver.*—The failure of any of the parties hereto to insist, in any one or more instances, upon the performance of any of the terms or conditions hereof shall not be construed as a waiver or relinquishment of the right to insist upon the future performance of any such term or condition.

14. *Force Majeure.*—Neither the Buyer nor the Seller shall be responsible for delays, failures, or omissions due to any cause or causes beyond its control, however arising, and which cannot be overcome by due diligence, including, without limiting the generality of the foregoing, the inability of the Seller to obtain steamers or other vessels of a capacity sufficient to transport the raw materials required by the Seller for the production of the aluminum to be delivered hereunder and the inability of the Buyer to effect the exportation of the aluminum from Canada to the United States. Upon the cessation or rectification of the cause or causes delaying performance hereunder, each date specified in this Contract for the performance of any of the terms or conditions hereof, other than the payment of the principal of the loan at the expressed maturity date thereof, shall be extended by the number of days during which performance was so delayed and, except as so amended, this Contract shall be performed in the same manner and to the same extent as if performance hereunder had not been suspended.

If, for any cause hereinabove mentioned, the date for the completion of deliveries hereunder shall be extended beyond December 31, 1945, the expressed maturity date of the loan and of the note or notes evidencing the same shall be extended to July 15, 1946, and shall be similarly extended for periods of six months each whenever and as often as the date for the completion of deliveries hereunder shall be less than fifteen days prior to the then expressed maturity date of the loan; provided, however, that in no event shall the expressed maturity date of the loan be extended beyond July 15, 1951.

15. *Status of Seller.*—The Seller hereby warrants and represents that in the making of this Contract it is not acting in any manner whatsoever for or on behalf of the government of any state or dominion, or of any political subdivision thereof.

16. *Statutory Provision.*—No member of or delegate to the Congress of the United States shall be admitted to any share or part of this Contract, or to any benefit arising therefrom, but this provision shall not be construed to extend to this Contract insofar as it is made with a corporation for its general benefit.

17. *Notice.*—Any notice hereunder shall be sufficient if given in writing to the Seller at 1700 Sun Life Building, Montreal, P. Q., and to the Buyer or the Bank at Lafayette Building, 811 Vermont Avenue NW., Washington, D. C., or to such other address as any of the parties may hereafter specify to the others in writing.

IN WITNESS WHEREOF, METALS RESERVE COMPANY and EXPORT-IMPORT BANK OF WASHINGTON have caused this Contract to be executed in their corporate names by their respective officers thereunto duly authorized and their corporate seals to be hereunto affixed at Washington, D. C., and ALUMINUM COMPANY OF CANADA, LIMITED, has caused this Contract to be executed in its corporate name by its officers thereunto duly authorized and its corporate seal to be hereunto affixed at Montreal, P. Q., all as of the day and year first above written.

METALS RESERVE COMPANY,
By /s/ G. TEMPLE BRIDGMAN, *Vice President.*

Attest:

[SEAL]

/s/ M. C. MULLIGAN, *Assistant Secretary.*
ALUMINUM COMPANY OF CANADA, LIMITED,
By /s/ R. E. POWELL, *President.*

Attest:

[SEAL]

/s/ H. W. WAKE, *Secretary.*
EXPORT-IMPORT BANK OF WASHINGTON,
By /s/ WARREN LEE PIERSON, *President.*

Attest:

/s/ HAWTHORNE AREY, *Secretary.*

EXHIBIT A.—STORAGE AND OWNERSHIP CERTIFICATE OF ALUMINUM COMPANY OF CANADA, LIMITED

Certificate No. _____

(Place)

(Date)

The undersigned Company hereby certifies that it has received and holds in storage at _____

(Describe location of storage)

for Metals Reserve Company, Washington, D. C., _____ pounds of virgin Aluminum Ingot of 99.3% guaranteed minimum purity, conforming to the specifications and requirements of the Contract, dated as of July 15, 1941, between Aluminum Company of Canada, Limited, Metals Reserve Company, and Export-Import Bank of Washington, and described as follows:

Lot Nos.

Pieces

Pounds

and that said aluminum is owned by Metals Reserve Company and will be stored and shipped in accordance with the aforesaid Contract.

ALUMINUM COMPANY OF CANADA, LIMITED,

(Authorized Officer)

EXHIBIT B

\$ _____ No. _____ Montreal, P. Q., 194 .

FOR VALUE RECEIVED, the undersigned promises to pay to EXPORT-IMPORT BANK OF WASHINGTON (hereinafter called the "Bank"), at its office in the City of Washington, District of Columbia, on the 15th day of January, 1946, the sum of _____ Million Dollars (\$ _____)

in lawful money of the United States, with interest on said principal sum, or the balance thereof from time to time remaining unpaid, at the rate of three per cent. (3%) per annum, payable on the 15th day of January in each year.

This is one of a series of notes issued under and pursuant to a contract, dated as of July 15, 1941, between the undersigned, the Bank and Metals Reserve Company, and is in all respects subject to and governed by the terms of said contract, which is hereby incorporated herein by reference with the same force and effect as if herein set forth at length. Said contract provides, among other things, that (i) the maturity hereof may be extended if for any cause beyond the control of the undersigned performance under said contract shall be delayed beyond December 31, 1945, (ii) this note may be prepaid in whole or in part at any time and from time to time, and shall be prepaid to the extent and at the times that funds shall be owing to the undersigned by said Metals Reserve Company and available for such purpose, (iii) the payment of interest hereon may be deferred until the 15th day of April next following any interest payment date if the amount owing by said Metals Reserve Company to the undersigned on such date and available for the payment of interest hereon shall be insufficient for such purpose; and (iv) if and to the extent that said Metals Reserve Company becomes obligated under said contract to make any payment to the Bank for the account of the undersigned in respect of the principal hereof or interest hereon, the obligation of the undersigned shall be reduced by the amount of the payment or payments for which said Metals Reserve Company shall become so obligated, whether or not such payment or payments shall be made, and, subject to the provisions of said contract, the Bank shall look solely to said Metals Reserve Company for such payment or payments.

In case certain events specified in the said contract, or any of such events, shall occur, the principal of this note shall become due and payable as therein specified without presentation, demand, protest, or notice of any kind, all of which are hereby expressly waived.

ALUMINUM COMPANY OF CANADA, LIMITED,
By _____

Payments have been made on account of the principal of the within note as follows:

Amount	Date	Authorized officer
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SUPPLEMENTAL DATA

The following data is included in relation to the testimony of Jesse H. Jones, *supra* pp. 2222-2253.

[Copy]

ALUMINUM COMPANY OF AMERICA,
605 SOUTHERN BUILDING,
Washington, D. C., September 16, 1941.

Hon. JESSE H. JONES,
Federal Loan Administrator,
Washington, D. C.

DEAR MR. JONES: I have gone over your summary of the provisions of the contract of August 19, 1941, between Defense Plant Corporation and Aluminum Company of America. Naturally in such a summary you do not purport to cover every provision of the contract, but merely the more important ones.

So far as I can see you have correctly summarized the provisions of the contract with which the summary deals, but I understand that the summary is not intended in any way as a modification of the contract.

Yours very truly,

(Signed) ARTHUR V. DAVIS.

SEPTEMBER 16, 1941.

SUMMARY OF THE PROVISIONS OF THE CONTRACT BETWEEN DEFENSE PLANT CORPORATION AND ALUMINUM COMPANY OF AMERICA SUBMITTED BY MR. JONES IN ACCORDANCE WITH HIS TESTIMONY

1. Alcoa agrees to prepare plans and specifications for the construction and equipment of four plants: One for the production of *alumina* in the State of Arkansas, with a capacity of approximately 400,000,000 pounds per annum; one for the smelting of *aluminum* near Massena, New York, with a capacity of approximately 150,000,000 pounds per annum; one for the smelting of *aluminum* adjacent to deep water in Washington or Oregon, with a capacity of approximately 90,000,000 pounds per annum; and one for the smelting of *aluminum* in the State of Arkansas with a capacity of approximately 100,000,000 pounds per annum. All plans, designs, specifications, and schedules are subject to approval by Defense Plant Corporation, and when approved Alcoa agrees to proceed with the construction.

2. Alcoa may employ subcontractors for building the plants, but any such employment shall be approved by Defense Plant Corporation.

3. Alcoa shall buy the sites, build and equip the plants without profit to itself, but shall be reimbursed for the cost thereof, including the expense of its own organization in connection therewith. *Any such amount shall be subject to the approval of Defense Corporation. Except as hereinafter provided in paragraph 21 there shall be no reimbursement to Alcoa for the salaries of the Chairman of its Board of Directors, its President, its Vice Presidents, its Secretary and its Treasurer. A representative of Defense Corporation will be stationed at the site of each of the plants to approve each item of cost and expense.*

4. Alcoa acts as agent of Defense Corporation in the construction and equipment of the plants, and agrees to carry liability and other obtainable insurance necessary to protect the Corporation from loss due to accidents, etc. Subject to the above, Defense Corporation will hold Alcoa harmless from liability.

5. *Title to the building sites, buildings, machinery, equipment, etc., will be in Defense Corporation, and each article of machinery and equipment will be so marked as to be readily identified as belonging to Defense Corporation.*

6. Alcoa agrees to comply with all Federal laws applicable to the construction program.

7. The maximum liability to Defense Corporation for construction and equipment of the plants shall not exceed \$52,100,000.

8. Alcoa leases the plants for five years, and agrees to pay as rental an amount equal to actual depreciation plus 85% of the net profits arising from the operations of each of the plants, determined separately as to each plant. If any one of the plants shall operate at a loss during any calendar year, Defense Corporation will reimburse Alcoa for such loss less Alcoa's share of profits from the operation of that plant for the previous calendar year or years after deducting from such profit any income or excess profits taxes paid by Alcoa from said previous profit. Thereafter Defense Corporation shall be entitled to all profits resulting from the operation of such plant until such profits shall equal the amount paid by it to Alcoa to reimburse Alcoa for any such loss.

9. Alcoa agrees to keep full and complete records, on a recognized cost-accounting basis, showing in detail all items of income and expense and other information and data necessary for the determination of profits or losses arising out of the operation of the leased plants.

10. Alcoa agrees to maintain separate records of shipments and invoices of all alumina produced in the alumina plant and of the shipments and invoices of all aluminum produced in the leased aluminum smelting plants, as well as shipments and invoices of all ingot and pig aluminum produced in its own smelting plants.

11. Alumina produced by the alumina plant shall be transferred to the leased smelting plants to the extent of their requirements at prices to be agreed upon from time to time by Defense Corporation and Alcoa, and the remainder disposed of as Defense Corporation may direct at prices to be agreed upon by Defense Corporation and Alcoa.

12. Alcoa agrees to keep separate, full, and complete records, on a recognized cost-accounting basis, showing the actual cost of all sites and all items of labor, materials, equipment, supplies, services, and other expenditures of whatsoever nature for which Defense Corporation is directly obligated or for which Alcoa is entitled to reimbursement in connection with the acquisition of the sites and the construction and equipment of the plants.

13. Alcoa agrees that Defense Corporation may examine and audit the records applicable to the leased plants.

14. Alcoa agrees to operate the leased plants in an efficient manner and exercise the same care therein as it uses in the operation of its own plants, and in order that Defense Corporation shall be assured on this point, Alcoa will, when requested by Defense Corporation, have a certified public accountant, acceptable to Defense Corporation and Alcoa, submit to Defense Corporation as soon as is convenient after the close of any year, a statement showing the average price paid for labor each year in its own smelting plants and in the leased smelting plants, and the average price paid for, or at which transfers were made of, alumina, power, cryolite, aluminum fluoride, and carbons used in its own smelting plants, and in the leased smelting plants during said year.

15. Alcoa agrees that Defense Corporation may inspect any of the leased plants at all reasonable times.

16. Alcoa will not, without the prior written consent of Defense Corporation, assign or pledge the lease or any rights under it, or sublet or permit the use by others of any of the property covered by the lease, except that Alcoa may assign to a wholly owned subsidiary upon condition that Alcoa remain liable for the fulfillment of the contract by the subsidiary.

17. *The contract provides that if power cannot be had for any of the plants, that plant need not be built.*

18. *While nothing is said about it in the contract, Alcoa agreed to reduce the price of ingot aluminum, effective September 30, 1941, from 17¢ to 15¢ per pound. This will effect a very large saving to the Government and other users of aluminum, probably \$20,000,000 a year, or more.*

19. *The contract provides that such grade and form of aluminum produced by Alcoa in Defense Corporation's plants and its own plants shall be sold by Alcoa upon the same prices, terms, and conditions, and that, if at any time, in the opinion of Defense Corporation, the price at which Alcoa is selling the aluminum produced in the leased smelting plants results in unreasonable profits, Defense Corporation and Alcoa shall attempt to agree upon a price satisfactory to Defense Corporation, and if they fail to agree, Defense Corporation shall have the right to cancel the contract upon six months' notice. These provisions give Defense Plant Corporation an effective control of the price of aluminum insofar as excessive profits are concerned.*

20. The contract provides that the new plants shall share proportionately with Alcoa's own plants according to the rated capacity of all the plants, in whatever amount of aluminum is manufactured during the life of the contract, and that if the demand should fall below 40% of the rated capacity of all Alcoa owned plants and the leased plants, either party may then cancel the contract.

Everyone knows that with a total manufacturing capacity in the United States of approximately 1,500,000,000 pounds of aluminum per year, after the emergency much of this capacity cannot be used because of a lack of demand for the product. So the effect of the contract assures that the Government plants will be operated on a parity with Alcoa plants for the full five-year period, or until the demand falls below 40% of the capacity of all the plants.

21. Alcoa's proper items of overhead are to be treated as an expense in determining profits and losses. Those which are specifically applicable to the alumina plant are to be included up to an amount not exceeding $\frac{1}{8}\epsilon$ per pound of alumina. Those specifically allocable to a particular smelting plant are to be included up to an amount not exceeding $\frac{1}{4}\epsilon$ per pound for aluminum. To cover that part of Alcoa's overhead which is not specifically allocable to the leased plants but has nevertheless been incurred in connection with their operation, an amount equal to $\frac{1}{8}\epsilon$ per pound of aluminum produced in the leased plants shall be included as an expense, and to the extent that alumina produced in the leased alumina plant is sold to others or not used to smelt aluminum in the said leased plants by Alcoa, an amount equal to $\frac{1}{4}\epsilon$ per pound shall be included for such alumina. Where the alumina is used to smelt aluminum in the leased plants, then there is only one charge for unallocable overhead, namely, $\frac{1}{8}\epsilon$ per pound of aluminum.

22. The contract specifies that nothing in it shall prevent either Alcoa or the Government building as many more plants of the same character as either may wish.

23. Obviously in making a contract for the construction, equipment, and operation of four important industrial plants, every contingency that may arise over a period of five years cannot possibly be foreseen. Accordingly, the contract provides that any such contingencies that may arise shall be decided by the Federal Loan Administrator and the chief executive officer of Alcoa, and, if they are unable to agree, they shall call in a third party and a decision of two of the three will be binding.

24. It is the purpose and spirit of the contract that the aluminum smelting plants are to be built as rapidly as practicable, and that when completed they will be operated by Alcoa to their full capacity during the five-year lease period, provided there is a demand for the product at prices which afford a reasonable profit, and failure so to do would be cause for Defense Plant Corporation to cancel the contract.

The following data is included in connection with testimony supra 2033 et seq.

MAY 7, 1938.

EXTRACT

Memorandum to Colonel Chaffee:

* * * * *

Page 5, paragraph 13. I personally told the Quartermaster General and G-4 of such a possibility and suggested that they think of projects. Time passed on; and on February 18 (with the bill to be signed by the President the 21st) I called the Quartermaster General to find out what had been done. Captain Violante told me that he did not think we could use any more money—that the posts “were surfeited.” I happened to know that many posts were requesting funds—in fact at the very time the Quartermaster General was saying they could use no more. Letters were coming through this office from post commanders requesting money and endorsements were being put on by the Quartermaster General that the project was approved, etc., and it could be constructed “if and when Work Projects Administration money was available”; General Seaman called me on the telephone a few minutes later and said, in part: “We cannot use a damned cent of your money. We can use \$3,000,000 if you can get a 50-percent exemption for material; otherwise not a nickel.” I explained to him that if such a thing were possible—and a 50 percent exemption is not in accord with the President's program—but that if it were possible, we could take the entire \$225,000,000 deficiency bill and start the permanent construction program in the Army * * *.

CONVERSATION BETWEEN MR. HUGH FULTON, CHIEF COUNSEL, TRUMAN INVESTIGATING COMMITTEE, AND COLONEL WILSON

MR. FULTON. Colonel Wilson, I want to make some further inquiries regarding the use which might have been made of W. P. A. funds by the construction agencies of the War Department in the period of years preceding the present

emergency. You heard the testimony of General Tyner, General Hartman, General Baade, and General Seaman. On August 7, General Tyner testified in substance that he thought the War Department had sufficient plans for construction; that he did not envision any such sum as \$15,000,000 for the purpose of making some plans for camps as has recently been authorized to the Quartermaster General by Congress; that he didn't think that the War Department should have planned for a million and a half men in barracks, as was the experience in the last World War.

On August 12, General Tyner continued his testimony and stated that one reason the War Department had no detailed plans and estimates for construction was that no money had been made available.

You will remember that the committee requested the War Department to furnish us with information with respect to W. P. A. funds that might have been available, and among other items, one document showed that as far back as the spring of 1939 there had been more than \$2,500,000 available for "administrative expenses" which, I take it, could have been used for the hiring of architects, draftsmen, statisticians, clerks, etc. Will you please elaborate on this statement and these figures?

Colonel WILSON. The figures you refer to are shown on that chart which was compiled on March 20, 1939, and which shows the amount of funds, including administrative expenses, which was allocated to the War Department (except the Corps of Engineers) by the W. P. A. since its establishment. The funds available for administrative expenses in the fiscal years 1936 to 1939, inclusive, were \$2,553,297.

Mr. FULTON. What was the total amount of W. P. A. funds allocated to the War Department during that period?

Colonel WILSON. The totals allocated to the War Department are shown in the last column of the chart; that is:

Fiscal year:	Grand total
1936-----	\$18, 594, 867
1937-----	31, 485, 778
1938-----	50, 396, 232
1939-----	69, 111, 735
Total-----	169, 588, 612

I desire to invite your attention to the fact that in the fiscal year 1937, in addition to the fifty-odd million which the War Department spent, the Bureau of the Budget had approximately \$8,000,000 additional for direct Federal allotment, which was not used by the War Department.

Mr. FULTON. Why was the money not used?

Colonel WILSON. I think those gentlemen have answered the question in their testimony.

Mr. FULTON. Oh, yes; there were not going to be any more wars, and General Tyner said that they didn't need any plans.

Colonel WILSON. Well, whatever the testimony shows.

Mr. FULTON. As I understand it, you had general charge of the W. P. A. at that time?

Colonel WILSON. No; I did not have charge of the W. P. A. I was designated as liaison for the War Department with the W. P. A., and secured what funds I could from that organization to rehabilitate Army posts, and to do a great many other things which it was believed would be of benefit to the Army. The requests for funds to be diverted to Army use were not always favorably considered by the W. P. A., but for the most part the W. P. A. was very anxious to do whatever it could for the War Department.

Mr. FULTON. Did you always receive the sympathetic and enthusiastic cooperation of the War Department?

Colonel WILSON. In my opinion, not always.

Mr. FULTON. Please explain further.

Colonel WILSON. It would take too much of your time to go into all of the many details. I do want to make this plain, however, that there were two schools of thought as to the use which could be made of W. P. A. funds. I was on one side and was supported by my chief, Colonel Chaffee, who was head of the Budget and Legislative Planning Branch to which I was assigned at that time; and on the other side were Generals Tyner and Seaman; Colonel Baade, who was Chief of the Construction Branch of the General Staff under General Tyner; and in particular, Lieutenant Colonel Robertson, who was General Tyner's executive.

Mr. FULTON. Who is Colonel Robertson? Why was he not called before the committee?

Colonel WILSON. He was General Tyner's executive officer, as I have said. I don't know why he was not called. That was up to you. However, I don't think he would be able to give any information not already supplied by Generals Tyner, Baade, and Seaman.

Mr. FULTON. I think it important to make the record clear, because it appears from the records of the War Department that there were W. P. A. funds available which might have been used for planning, but which were not used.

Colonel WILSON. That is correct, and it was certainly through no fault of mine that the funds were not used. The record will also show that. General Tyner, General Baade, and General Seaman, and Lieutenant Colonel Robertson were always impressed with the idea, and I am not saying that they were not correct, but they were impressed with the idea that the War Department would be criticized for using too much relief money. Robertson prepared one memorandum for the Deputy Chief of Staff which I have here (table A), showing that the valuation of the War Department plant was from 600 to 700 million, and pointed out that the amount of relief funds being used on War Department property was approximating the total value of the posts. I think his figures were wrong, but, nevertheless, that was his viewpoint. I took the stand that it was the policy of the administration to put relief people to work; that if the funds were not spent by the War Department, they would be spent some place else, and that the War Department should make every effort to use all funds which it was possible to obtain, because all of the work we were doing in the rehabilitation of Army posts, which were practically falling down because of a couple of decades of neglect, was useful.

There was entirely too much red tape between General Tyner's office and General Seaman's office. I sensed a great jealousy on the part of Baade and Robertson, and resentment over the fact that I was not always following so-called "military channels." The only way to get anything done was to go over their heads and correspond, in some cases, directly with the post commanders, who, after all, were in touch with the local W. P. A. administrators.

Mr. FULTON. In your opinion, could more have been done than was done with relief labor toward preparing for this emergency?

Colonel WILSON. In my opinion, there certainly could have, and also in my opinion, those four generals are the ones who blocked additional work being done. The record which was introduced and referred to by General Tyner is a good one to make the point.

Mr. FULTON. You mean the memorandum which was referred to by General Tyner in which he stated that G-4 has felt for some time that too much relief money is being allotted?

Colonel WILSON. Yes; that is a brief written by his executive, Colonel Robertson, in which General Tyner referred to in his memorandum to the secretary, General Staff, in which he states: "Colonel Robertson, my executive's brief hereon, expressed my ideas exactly."

Mr. FULTON. You can see that that brief was based on several pages of memoranda from General Seaman to General Tyner, and then several pages of memoranda written by General Baade to General Tyner based on General Seaman's long memorandum, and then by that time there was so much writing that Colonel Robertson felt impelled to make a brief, and then General Tyner wrote another memorandum to cover it all to the secretary, General Staff, and this is all incited by a directive from the Deputy Chief of Staff to General Tyner stating that there was about \$3,000,000 of additional funds available to the War Department, and directing that projects be put in for that amount. Inasmuch as the point was made, I am very glad I amplified this record which General Tyner referred to in order to make it very plain that if money was not used; and it was not used, the responsibility rests solely upon the office of the then G-4 and the then chief of the construction division of the Quartermaster General's office.

Mr. FULTON. When did you go on duty with the General Staff?

Colonel WILSON. In June 1937.

Mr. FULTON. Did you consider the War Department was making full use of relief funds?

Colonel WILSON. I think the chart dated March 20, 1939, speaks for itself.

Mr. FULTON. Why was not some of this money used to do preliminary work for cantonments?

Colonel WILSON. The only places we could use Federal money was on land owned by the War Department. Not all of the cantonment sites as we know them today are on War Department property. I believe the testimony hereto-

fore has shown that the War Department did not plan to put troops into cantonments. However, on September 27, 1939, I did recommend to G-4 that underground utilities be put into cantonments and preliminary work done (table B). That recommendation was turned down by G-4. There is one place it did work—at Camp Custer, Mich. Roads and railroads were put into shape; the utilities overhauled; railroad siding rebuilt; about 10 or 12 concrete warehouses constructed and a great amount of work done which was of great benefit to the constructing quartermaster when it was decided to build a cantonment at Camp Custer. I think the record will show that Camp Custer is an outstanding example of speedy construction in bad weather. I am informed by Colonel Groves of the Construction Division of the Quartermaster General's Office, that the reason construction went so well at Camp Custer is because so much of this preliminary basic work had been done.

Mr. FULTON. In your opinion, could this have been done at other cantonments?

Colonel WILSON. It certainly could have, to some extent at least.

Mr. FULTON. Now, about money for plans and for other administrative expenses incident to preparation of plans, do you know why the money was not used?

Colonel WILSON. I do not. I know it was available. I also know that there was a tendency on the part of the Construction Division of the Quartermaster General's Office to complain about the clerical labor necessary to plan these projects. However, all such money was paid out of W. P. A. expenses. All they had to do was set up the staff. It was not until General Hartman went down there as executive officer that larger amounts of funds for administrative expenses were used. The funds referred to by General Seaman and General Hartman for the preparation of plans were allocated to the Quartermaster General to revise plans for the construction of cantonments. Prior to that time the Quartermaster General had not asked for such allocations. Realizing that no progress could be made through that channel, I contacted an officer in the Corps of Engineers (Lieutenant Colonel Mayo) and we talked with General Somervell, who was then the W. P. A. administrator in New York City. Colonel Mayo of the engineers put in a request for a big project in New York City, which employed several hundred draftsmen, architects, etc., and revised all construction plans and made those materials for all of the construction that the Corps of Engineers might have to perform in wartime. That was when the construction under the Corps of Engineers was limited to that in the theater of operations. It is a monumental piece of work.

It will do you good to take a look at it in Colonel Mayo's office in the New War Department Building. It was ready when the emergency came upon us.

I also remember quite well that the Chief of the Construction Division of the Quartermaster General's Office was quite incensed when he found out that this work was being done by the Corps of Engineers, and wanted to know if I didn't realize that the Quartermaster Corps had charge of all construction. I had to do a lot of official explaining in order to make clear why the project was operating.

Mr. FULTON. Could the same plan have been prosecuted in the Quartermaster General's Office?

Colonel WILSON. In my opinion, yes.

Mr. FULTON. Who should have directed that such plans be made?

Colonel WILSON. In my opinion, it is the responsibility of G-4 to see that proper plans are being made, and if during that period the officers in G-4 had spent more time in thinking about plans and less time in writing official recommendations to the Chief of Staff about me, the War Department would have been further along in its planning for construction of cantonments.

JULY 29, 1939.

MEMORANDUM FOR THE DEPUTY CHIEF OF STAFF

Subject: Utilization of Work Projects Administration by the War Department.

In accordance with your verbal request, I am submitting below supplementary data in regard to use of Work Projects Administration by the War Department:

1. The estimated plant valuation of War Department holdings, both continental United States and foreign possessions, is as follows:

(a) Buildings and utilities pertaining to barracks and quarters and construction and repair of housing, exclusive of the technical services (Ordnance, Signal

Corps, Air Corps, Chemical Warfare) last year was \$538,000,000. Due to new construction now under way this figure will be raised for the next fiscal year to approximately \$600,000,000. No figures are immediately available for construction pertaining to the technical services, but these would increase the above figure materially. The figures above quoted are used for defense of pertinent estimates before Congress.

(b) The following allotments from Work Projects Administration (or corresponding relief agencies) have been made to the War Department:

	State	Federal	Total
Fiscal year:			
1934.....		\$10,848,827	\$10,848,827
1935.....		5,229,227	5,229,227
1936.....	\$2,863,291	16,169,364	19,032,655
1937.....	14,455,787	13,234,903	27,690,690
1938.....	12,339,918	26,986,265	39,326,183
1939.....	50,318,880	21,304,981	71,623,861
1940.....		16,326,500	16,326,500
Total.....	79,977,876	110,100,067	190,077,943

(c) The War Department plant in the United States upon which Work Projects Administration could be used, including technical construction, is estimated at from \$600,000,000 to \$700,000,000 (technical construction added, foreign possessions deducted). From 1934 to 1940, inclusive, we have used approximately \$200,000,000 Work Projects Administration or similar funds, or approximately 30 percent on this plant value. It is believed that the above figures will contravene any contention that the War Department has not utilized Work Projects Administration funds very extensively.

2. There are attached hereto statements showing the detailed procedure involved in procuring Federal and State Work Projects Administration funds for War Department use. It is desired to emphasize the fact that the Quartermaster Corps Forms 105 can and should be processed well in advance of any steps taken to secure the Work Projects Administration allotments in question and that if this is done, the only delay incurred in expediting Work Projects Administration projects themselves will rest almost entirely within the Work Projects Administration organization.

3. In considering the further extensive utilization of Work Projects Administration funds under the present law, three factors militate appreciably in such use:

(a) Work Projects Administration has been used by the Army since 1934 and most low material cost projects have been used up.

(b) During the past year, the law provided for \$7 in material per man per month and the number of hours was around 90 per month. The present law provides only \$6 per man per month and increases the number of hours of labor to 130. On a comparative basis, therefore, the material money has actually been reduced to approximately \$4.50 per man per month as compared with last year.

(c) Under the present law, no Work Projects Administration funds can be used on Federal building, total cost of which exceeds \$50,000. This was the feature which militated very much against our extensive use of Work Projects Administration in the Air Corps augmentation program, particularly for permanent construction.

W. M. ROBERTSON,
Lieutenant Colonel, General Staff, Executive.

The following data appear herewith in connection with testimony of Mr. Jesse Jones, *supra*, pp. 2222-2253.

HUGHES, HUBBARD & EWING,
ATTORNEYS AND COUNSELORS AT LAW,
Washington, D. C., December 24, 1941.

HUGH A. FULTON, Esq.,
*Chief Counsel, Special Senate Committee Investigating National Defense,
Senate Office Building, Washington, D. C.*

DEAR MR. FULTON: In compliance with your suggestion that instead of Mr. Arthur V. Davis, chairman of the board of directors of the Aluminum Co. of America, appearing before your committee, he submit a written statement of his conversations with Mr. Jones and other representatives of Defense Plant Corpo-

ration regarding the negotiations leading up to the contract between Defense Plant Corporation and Aluminum Co. of America, dated August 19, 1941, I am pleased to hand you herewith such statement.

In the preparation of this statement Mr. Davis has endeavored to describe the negotiations relating to each provision of the contract about which any questions were asked when Mr. Jones appeared before the committee on September 15, 1941 and when Mr. Wilson and I appeared before the committee on October 31, 1941. I trust you will find it satisfactory.

Wishing you a Merry Christmas and a Happy New Year, believe me,

Cordially and sincerely,

OSCAR R. EWING.

STATEMENT OF ARTHUR V. DAVIS, CHAIRMAN OF THE BOARD OF DIRECTORS OF THE ALUMINUM CO. OF AMERICA, REGARDING HIS CONVERSATIONS WITH REPRESENTATIVES OF THE DEFENSE PLANT CORPORATION DURING THE NEGOTIATIONS LEADING UP TO THE CONTRACT BETWEEN DEFENSE PLANT CORPORATION AND THE ALUMINUM CO. OF AMERICA, DATED AUGUST 19, 1941

This statement is made in response to a suggestion of counsel for the Special Committee of the Senate Investigating the National Defense Program that I give my recollections of discussions with Federal Loan Administrator Jones and other representatives of Defense Plant Corporation in connection with the negotiations leading up to the contract of August 19, 1941, between Defense Plant Corporation and the Aluminum Co. of America. (I shall frequently refer to Aluminum Co. of America as "Alcoa.") It was suggested that I particularly endeavor to relate all such discussions which had to do with the various provisions in that contract about which questions had been raised at the time Mr. Jones appeared before the committee on September 15, 1941, and at the time Mr. I. W. Wilson, one of the vice presidents of Alcoa, and Mr. Oscar R. Ewing, one of its counsel, appeared before the committee on October 31, 1941. I shall try to do this.

1. For many months prior to July 14, I and other representatives of the Aluminum Co. of America had had frequent conferences with representatives of the Office of Production Management in connection with the program that the Office of Production Management was working out for increasing the production of aluminum in the United States. In the latter part of June 1941 the Office of Production Management publicly announced a program providing for the construction of additional aluminum smelting plants with an annual capacity of 600,000,000 pounds and an alumina plant with a 400,000,000-pound annual capacity. However, this announcement of the Office of Production Management contained nothing to indicate the extent to which Alcoa was expected to participate in the program.

2. In the afternoon of July 14, 1941, I was instructed by officials of the Office of Production Management to get in touch with Mr. Jesse H. Jones, Federal Loan Administrator, and discuss the making of a contract for the construction of an alumina plant and three aluminum smelting plants. I immediately telephoned Mr. Jones and arranged to meet him in his office at the Federal Loan Agency on the morning of the following day, namely, July 15, 1941.

3. Very early the next morning I received a telephone call from Mr. Bernard Baruch telling me that he wanted me to go with him right away and see Secretary Ickes. I asked Mr. Baruch if Secretary Ickes wanted to see me and Mr. Baruch replied that he did; that he was waiting for Mr. Baruch and for me to call on him in this office at that very time. Mr. Baruch and I proceeded at once to Mr. Ickes' office, where we had a friendly talk with him, in which he expressed his interest in the aluminum program. He asked when I was to see Mr. Jones and I told him that I was going to Mr. Jones' office just as soon as Mr. Baruch and I had finished our talk with him [Mr. Ickes]. Secretary Ickes then said that as soon as I left him he would telephone Mr. Jones to say that I was coming over to discuss the aluminum program and that he wanted Mr. Jones to see me and go over the matter with me. I was afterwards advised that Mr. Ickes did say to Mr. Jones that if he wanted to put an aluminum smelting plant out in the Bonneville-Grand Coulee district Mr. Ickes would be glad to have the Bonneville power administrator furnish the power.

4. At Mr. Jones' office I first met Mr. Sam Husbands, Mr. John Snyder, and Mr. Clifford Durr. The representatives of Alcoa at the conference, in addition to myself, were Mr. I. W. Wilson, one of our vice presidents, and Mr. Oscar R. Ewing, one of its counsel. Later Mr. Jones joined us. This was the first time I had ever met Mr. Jones.

5. I did not go into that conference with any fixed ideas regarding the type of arrangement to be made, although we (Alcoa) had made certain suggestions to the Office of Production Management in a letter written to Mr. Knudsen on May 12, 1941, in which we had suggested a 10-year agreement under which we would design, construct, and manage the operation of a Government smelting plant and sell the output on the same terms as we sold our own production, the agreement to cover equitable arrangements for (1) providing materials and supplies at fair market prices to the extent Alcoa had capacity for such materials and supplies; (2) curtailing production in the event of a diminution of consumption; and (3) operating the Government-owned plant so as not to be prejudicial to privately owned plants in the industry.

6. Before Mr. Jones joined the conference, there was some general discussion with Mr. Husbands, Mr. Snyder, and Mr. Durr in which they asked general questions about the conduct of the aluminum business which we answered. After Mr. Jones joined us, he asked if we had in mind the type of deal that should be made, and I answered that we did not but had come to find out what the Government wanted. Mr. Jones said that since we knew more about the aluminum business than he did, he would like to have our suggestions. I pointed out to Mr. Jones that the problem was not simple, since there was not only a manufacturing problem but a selling problem. I told Mr. Jones that after the ingot aluminum is made it then must be fabricated into many different forms—sheets, forgings, etc.—and then it has to be assembled in finished form, such as airplanes. I explained that very little ingot aluminum would be sold directly to the Government that practically all ingot aluminum would have to be sold to and pass through one or more fabricators before it would be purchased from such fabricators by the Government. I told Mr. Jones that this required not only selling effort and sales engineering but more particularly sales service and that it would be very difficult for Alcoa to sell the product of the Government-owned plants separately from and on a different basis from the product of Alcoa's own plants.

7. Mr. Jones said as he thought over the matter, it looked impracticable to have two selling organizations and that it would probably be better to have Alcoa do the selling and to have the product of the Government plants and Alcoa's own plants sold at the same prices and on the same terms. (Provision to this effect was subsequently embodied in paragraph 13 of the contract of August 19, 1941.) At this point Mr. Ewing raised the question of whether an antitrust problem might not arise if Alcoa made any agreement to sell the product of the Government-owned plants upon the same terms as it sold the products of its own plants. It was left that this matter would have to be considered. At this first conference I also told Mr. Jones that Alcoa would construct the plants without profit to itself.

8. After giving further consideration to the question of whether Alcoa could make an agreement to sell the aluminum from its own plants at the same price as it sold the aluminum made in Government-owned plants operated by Alcoa under a management arrangement, our counsel, Mr. Ewing, came definitely to the conclusion this might constitute a violation of the antitrust laws. I think Mr. Ewing discussed this problem with Mr. Durr, counsel for Defense Plant Corporation, and Mr. Durr agreed that there was a serious question involved. Mr. Ewing also advised us that in his opinion if the transaction, instead of being on a management basis, took the form of Alcoa leasing the plants from the Government, then there would be no violation of the antitrust laws because of the fact that Alcoa would then at all times be selling its own product, whether manufactured in the leased plants or in its own plants. In this was, there would be no agreement between producers of aluminum, but merely one producer would be selling its own product at a price fixed by it. It was because of this legal situation and because under a lease agreement the selling difficulties to which I have referred above would be eliminated, that the idea of having the management arrangement was abandoned and the transaction took the form of a lease.

9. After the first conference above referred to with Mr. Jones, Mr. Husbands, Mr. Snyder, and Mr. Durr, the other representatives of Alcoa and myself returned to our hotel and discussed among ourselves various problems arising out of our talk with Mr. Jones and his associates. The following day I had a further conference with Mr. Jones and during the succeeding weeks up until the contract was finally signed on August 19, 1941, there were very few days in which I did not talk with Mr. Jones or Mr. Husbands or Mr. Snyder or Mr. Durr or, sometimes, two or more of them. Mr. Ewing and Mr. Durr had a good many conferences regarding the drafting of the contract in which I did not participate. I kept no notes or memoranda of what transpired at any of these conferences and it is

impossible for me now to recall just who was present at any particular conference. We were all driving ourselves to the limit of our strength to get the contract made at the earliest possible moment.

10. As a result of the discussions during the first two or three conferences which I had with representatives of Defense Plant Corporation, the basic form of the arrangement for the construction and operation of the plants was agreed to. When this point had been reached, it was arranged between Mr. Durr and Mr. Ewing that Mr. Ewing should make a first draft of the contract. The Defense Plant Corporation had a general form of contract which I understand is a public document available to anyone. Mr. Ewing took this standard form of contract and endeavored to fit the proposed agreement, so far as negotiated, into it. Many of the provisions in the contract as finally executed were taken bodily from the Defense Plant Corporation's general form of contract. Where the language of the general form was acceptable to both parties there would be no discussion with representatives of Defense Plant Corporation regarding such provision. We only spent our time on provisions which one party or the other wanted modified.

11. As an example of the use that was made of the Defense Plant Corporation's standard form of contract, I refer to paragraph 1 of the contract of August 19, 1941, having to do with the selection of sites for the plants. This language was merely an adoption to our particular transaction of wording contained in the general form used by Defense Plant Corporation. The general location of the sites, of course, had been designated by Office of Production Management and the selection of the particular sites in the designated localities was all that remained to be done. It was understood all along and agreed that Defense Plant Corporation would have the final say as to the location and cost of the various sites but that Alcoa would do the scouting to select one or more sites for a plant as would, in the opinion of Alcoa, seem to be desirable and worth presenting for decision to Defense Plant Corporation.

12. Again I think paragraph 2 of the contract followed the language that was in Defense Plant Corporation's general form. Naturally Alcoa was in a better position than Defense Plant Corporation to design the plants, but it was agreed and understood all along that such designs, specifications, etc., were to be submitted to the Defense Plant Corporation for their approval so that Defense Plant Corporation would have complete jurisdiction over location, character, size, and design of all of the plants.

13. When Mr. Wilson and Mr. Ewing testified before this committee on October 31, 1941, some questions were asked regarding the fact that the Government was unwilling to permit Alcoa to build the plants in question with its own funds but instead insisted that the plants be financed and owned by the Government. We understood that this was a decision of the Office of Production Management and I never discussed the matter with Mr. Jones or his associates other than to make mention of the fact that Alcoa had previously advised the Office of Production Management that Alcoa was willing to construct all such plants with its own funds so long as such funds held out, after which Alcoa might have to apply to the Reconstruction Finance Corporation for a loan or some other kind of financial assistance.

14. When Mr. Jones appeared before the committee on September 15, 1941, and again when Mr. Wilson and Mr. Ewing testified on October 31, 1941, the contract of August 19, 1941, was criticized because it did not contain a provision specifying definite dates upon which the construction of the respective plants should be completed by Alcoa. There were no discussions with the representatives of Defense Plant Corporation on this point. The standard form of Defense Plant contract provided that upon approval of the plans by Defense Plant Corporation the contractor was "to proceed in accordance therewith and complete as soon as practicable." This language was put in the first draft of the contract and there was no discussion of making any change in it. Naturally we expected to proceed with the construction of the plants with the utmost expedition and complete them as soon as possible. Manifestly, it is not practical to insert a completion date in a contract that contemplates negotiations for the acquisition of plant sites and of power contracts. Furthermore, in this case the acquisition of the sites, the engineering work and the erection of the plants were all to be carried on under the supervision of Defense Plant Corporation, which was in a position to expedite the work if not proceeding to its satisfaction. Then too, any completion date would be dependent upon delivery of materials and with the priorities situation so completely unsettled, it was impossible even to approximate what could be done in the way of obtaining deliveries for any specified dates. While we only began our discussions of a contract with Defense Plant

Corporation on July 15, nevertheless some weeks prior to that time Office of Production Management had made a public announcement of the fact that additional plants would be constructed by the Government to produce 600,000,000 pounds per annum of aluminum. Consequently around the end of June Alcoa began placing orders for equipment that would take the longest time to build. Although at the end of June Alcoa did not know what part it was to have in this program, nevertheless Alcoa went out and obligated itself for over \$6,000,000 worth of equipment in order that there might be no delay in building of these plants. In placing orders for this equipment, we arranged with the builders that in case Alcoa was not to construct the plants, the orders for the equipment could be assigned to whomever was to build them for the Government. These plants are now being built as fast as we know how to build them, which I believe is faster than anyone else can build them.

15. Paragraph 4 of the contract of August 19, 1941, provides in part as follows: "Alcoa shall be reimbursed for all salaries of officers (other than the chairman of its board of directors, its president, its vice presidents, its secretary and its treasurer) and employees engaged directly on the construction program whether at said plants or elsewhere." This provision of the contract was discussed with Mr. Jones and possibly one or more of the other representatives of Defense Plant Corporation, and it was agreed that inasmuch as Alcoa was providing the design and "know-how" and undertaking the construction of the plants at no profit, Alcoa should be reimbursed for all expenses occasioned by the construction program for the Government plants. However, Mr. Jones stated that he would like to have Alcoa eliminate any charges for the time spent on the work by any of its general executive officers, and I acquiesced. It was always understood that in those cases where Alcoa was to be reimbursed for the salaries of officers or employees, part of whose time was spent on Alcoa's own work, such reimbursement should be merely proportionate to the time actually devoted to the construction program.

16. Paragraph 4 of the contract of August 19, 1941, also provides as follows: "It is also agreed that the performance of certain parts of the work on the construction program can be done more economically when performed by Alcoa's own organization in connection with Alcoa's other business such as joint buying, joint engineering, and other joint services; and, therefore, in order to reimburse Alcoa for a proper share of such expenses which cannot be readily allocated but which are properly incurred in carrying out the construction program, Alcoa shall be reimbursed in an amount to be agreed upon by the parties hereto." In the discussions leading up to the inclusion of this provision in the contract, it was pointed out to Defense Plant Corporation that inasmuch as Alcoa itself was engaged on a considerable program of expansion involving building exactly the same type of plants as would be built by Alcoa for Defense Plant Corporation, it would be difficult to separate, and would be more economical not to attempt to separate, the expenditures allocable to each party for joint buying, joint engineering, etc. It was agreed that it would be almost impossible to forecast what such joint expenses would be and that it should be left for later decision when substantial, if not complete, information could be had as to what such expenditures had amounted to and what was a proper proportion to be assumed by each party. Consequently, it was agreed that the ascertainment of such amounts and the division between the two parties should be left until the time such information would be available.

17. At one of the hearings before the committee, reference was made to the fact that in one of the early drafts of the contract the amount of overhead for which Alcoa was to be reimbursed in connection with the construction program was to be a fixed dollar amount. As I recall, that provision was taken by Mr. Ewing from some specimen form of Government contract, which he included in the draft in order to raise the question for discussion. We never had any fixed sum in mind. Because of the reasons that I have enumerated in the preceding paragraph, no serious consideration was ever given to the language referred to as being embodied in the early draft.

18. The first sentence of paragraph 7 of the contract of August 19, 1941, reads as follows: "It is the understanding of the parties hereto and the intention of this agreement that all work in connection with the construction program which is approved by Defense Corporation is to be performed at the expense of Defense Corporation and without profit to Alcoa, and Defense Corporation shall hold Alcoa harmless against any loss, expense (including expense of litigation) or damages (including liability to third persons because of death, bodily injury or property injury, or destruction, or otherwise) of any kind whatsoever, arising out of, or in connection with, the performance of the work in connection with

the construction program, except to the extent that such loss, expense, damage or liability is due to the personal failure on the part of the corporate officers of Alcoa or of other representatives of Alcoa having supervision or direction over the construction program as a whole to exercise good faith or that degree of care which they normally exercise in the conduct of Alcoa's business." This language was, I think, taken from some standard form of Government contract and was worked out by the lawyers. As this was a legal question, I do not recall that there was any discussion about it in which I participated.

19. The last sentence of paragraph 10 of the contract of August 19, 1941, reads as follows:

"For a period of six (6) months immediately prior to the expiration of the terms of the leases for the respective plants as set forth in this paragraph ten, each party hereto agrees, upon the request of the other, to negotiate for further extensions of the leases of each such plant upon fair and equitable terms, but upon the failure of the parties to reach an agreement within such six (6) months' period neither party shall have any further obligation to enter into further negotiation."

Alcoa had originally desired a longer lease period than 5 years. Very early in the discussion Mr. Jones stated that he preferred a management contract or a lease for a period not in excess of 5 years after completion of a plant. He stated, however, that he felt that shortly prior to the expiration of the lease period we should sit down together and determine in the light of the then conditions whether any continuation of the lease, either modified or unmodified, should and could be negotiated. There were never at any time any other discussions with Mr. Jones or any other representative of Defense Plant Corporation as to what arrangement might be made regarding the plants after the expiration of the 5-year lease period.

20. Paragraph 11 of the contract provides that Alcoa shall pay as rental for each leased plant 85 percent of the profits arising from the operation thereof, plus an amount equal to the actual depreciation of each plant. This paragraph also provides that if there is a loss in the operation of a plant for any year, Defense Plant Corporation shall reimburse Alcoa for the amount of such loss to the extent that it exceeds Alcoa's share of the profits for previous years, less taxes paid with respect to such profits, etc. Naturally, as these provisions are among the most important in the contract, there was a great deal of discussion concerning them. I suggested that the rental payment for each plant might be based on profits arising from the operation of such plant, and after considering how this could be worked out I stated that if the abnormal cost of the high priced power were eliminated and if the Government would assume any loss arising from the operations, a fair distribution of any profit would be 80 percent to the Government and 20 percent to Alcoa. I pointed out that the high price for certain of the power being considered for some of the plants made their operation noncommercial at the then market price of aluminum and that we hoped to be able to reduce the price at which we sold aluminum. Mr. Jones said that such a reduction was his objective. After considerable discussion it was agreed to stabilize the cost of power purchased for the smelting plants at not higher than 3 mills per kilowatt-hour average for all leased smelting plants and this was subsequently provided for in the letter delivered by Defense Plant Corporation to Alcoa at the time the contract of August 19, 1941 was executed. Mr. Jones did, however, insist that the cost before profits include a payment to the Government of a sum of money to cover the actual depreciation of each plant and that the ratio of the distribution of profits be 85 percent to the Government and only 15 percent to Alcoa. He also insisted that the profit be calculated so that any prior losses should be deducted from any future profits for each plant before Alcoa benefited from any such profits and that any benefit Alcoa obtained from profits from any plant be offset against future losses from that plant. While I felt and so told Mr. Jones that with these changes Alcoa had no assurance of obtaining any fee or profit from the operation of these Government plants, I did agree to these provisions, and paragraph 11 was then drafted.

21. Paragraph 12 of the contract of August 19, 1941, provides that Defense Plant Corporation may furnish as much of the bauxite requirements of the leased alumina plant as it desires, at such fair and reasonable price as shall be agreed upon from time to time by Defense Plant Corporation and Alcoa. It was, of course, all along recognized that Defense Plant Corporation might acquire bauxite mines or might buy bauxite from others and supply bauxite to the alumina plant leased to and operated by Alcoa. This was an obvious right for the Defense Plant Corporation and there was no discussion as to its propriety or as to whether it should be included in the contract. As to the provision that the price should be agreed upon by Defense Plant Corporation and Alcoa, this provision was inserted by the lawyers and I do not recall any particular discussion regarding it

because it is so obviously fair that where one person is selling goods to another, both the buyer and the seller are entitled to a voice in the determination of the price.

22. Paragraph 13 of the contract provides that the 400,000,000 pounds per annum alumina plant, when completed, shall operate at such rates within its capacity as are agreed upon by the Defense Plant Corporation and Alcoa. This language, as I recall, was worked out by the lawyers and accepted by Defense Plant Corporation and Alcoa without any discussion. This is also true of the language in paragraph 13 which provides that alumina produced in the alumina plant shall be transferred to the leased aluminum smelting plants to the extent of their requirements at prices to be agreed upon between Defense Plant Corporation and Alcoa and the remainder of such alumina shall be disposed of in such manner as Defense Plant Corporation may direct, at prices to be agreed upon by it and Alcoa.

23. Paragraph 13 of the contract provides that if at any time, in the opinion of the Defense Plant Corporation, the price at which Alcoa is selling the aluminum produced in the leased smelting plants results in an unreasonable profit, after making due allowance for amortization and a fair return on the investment involved, then Defense Plant Corporation and Alcoa shall attempt to agree upon a price satisfactory to Defense Plant Corporation and, in the event of their failure to agree upon such a satisfactory price, Defense Plant Corporation shall have the right to cancel the agreement upon 6 months' notice in writing to Alcoa. This provision was inserted at the suggestion of Mr. Jones for the protection of the Defense Plant Corporation. It being obvious that Alcoa should set the price for its own product, it was equally obvious that Alcoa could not commercially sell the products of Defense Plant Corporation at either a higher or a lower price than its own price. Mr. Jones felt that if the Defense Plant Corporation should consider such prices too high that they should have the right to withdraw from the agreement.

24. Paragraph 13 of the contract provided that what constitutes unreasonable profits is to be left to the final determination of Defense Plant Corporation. There was no discussion as to what would be regarded a reasonable or unreasonable profit or as to the basis which would be used in determining the same. I may also say, at this point, that there was no discussion as to the rates at which the investment in the plants would be amortized in determining the reasonableness of prices for aluminum as provided in paragraph 13 of the contract. Neither was there any discussion as to the rates of depreciation which should be used under the provisions of paragraph 11 of the agreement and paragraph 6 of Appendix A, except that it was agreed that the depreciation should be actual depreciation.

25. During the hearings of this Committee of September 15 and October 31, 1941, some questions were asked regarding paragraph 14 of the contract which provides for the maintenance of insurance on the leased plants during the leased period and the application of proceeds of insurance in case of loss at any of the plants. Questions were also asked as to what would happen if the Government wished to rebuild a plant and Alcoa did not want to. The language of paragraph 14 was taken from the standard form of Defense Plant Corporation contract and I do not recall that there was any discussion of it.

26. Paragraph 16 provides that inventory, machinery, equipment, materials, supplies or other property located in any of the leased plants at the time of the expiration of the lease, which is not the property of Defense Plant Corporation, and which Alcoa owns or is entitled to possess, may be removed by Alcoa at such time. As I recall, Defense Plant Corporation's standard form of contract merely provided that machinery owned by Alcoa might be removed at the expiration of the lease. Alcoa never expected to own any of the machinery in any of these plants, but it probably will have a substantial amount of inventory, equipment, materials and supplies in these plants so the language was expanded to include these items.

27. Subdivisions (a), (b) and (c) of paragraph 18 provide for the keeping of certain records by Alcoa in connection with the construction and operation of the leased plants. Subdivision (d) provides for the inspection of such records. This language was, as I recall, prepared by the lawyers and was acceptable to both Alcoa and Defense Plant Corporation. I do not recall any discussion of these provisions.

28. Subdivision (e) of paragraph 18 provides for a certified public accountant, acceptable to Defense Plant Corporation inspecting certain of Alcoa's records relating to the operation of Alcoa's own aluminum smelting plants in order to enable Defense Plant Corporation to compare the efficiency of the operation of

the leased plants with that of Alcoa's own plants. This provision of the contract developed from a request by Mr. Jones that some mechanism be provided whereby Defense Plant Corporation could insure itself that the Government-owned plants were being properly and efficiently operated. I was entirely sympathetic with this suggestion and felt that Alcoa should give Defense Plant Corporation all necessary assurance on this point. Obviously many operations of the Aluminum Co. have no possible relation to the operation of the alumina plant or the aluminum smelting plants as, for example, things that are done in our fabricating plants. I know from my own knowledge of the aluminum business that if a comparison is made as to the cost of labor, aluminum, power, cryolite, aluminum fluoride and carbons, one can form a pretty sound judgment as to the efficiency of operation of plants. I therefore suggested that a certified public accountant examine Alcoa's books with respect to these items and furnish the results of the examination to Defense Plant Corporation so that it could make a comparison from this data as to the efficiency of operation of the leased plants as compared to the operation of the owned plants. Recognizing that possibly Defense Plant Corporation might desire other information from the books of Alcoa, it was provided that the certified public accountant could also go over our books with respect to any other matters that were deemed by both Defense Plant Corporation and Alcoa as important and pertinent to any comparison.

29. There were no discussions as to the necessity of any such comparison being made more than once a year. I think it was generally understood that the examination was to be made in connection with the ascertainment of profits or losses and as these were only to be determined once a year, we provided that this inspection of the records of Alcoa by a certified public accountant should be made once a year.

30. Similarly, there were no discussions regarding the provisions of subdivision (f) of paragraph 18, permitting Defense Plant Corporation to inspect any of the leased plants at all reasonable times during the continuance of the lease. It is quite usual to provide in a lease that the landlord may inspect the leased premises at all reasonable hours. The matter of permitting Defense Plant Corporation and its representatives to inspect Alcoa's own plants, in order to compare the design and operating efficiency of the Government-owned plants with those owned by Alcoa, was never mentioned during the negotiations, although I can assure you that there is no necessity for the contract to contain such provision because Alcoa would welcome such comparison and will freely permit inspections of its own plants for such purpose.

31. Paragraph 22 of the contract provides that Defense Plant Corporation may cancel the contract for various causes, among others, for any violation of the contract by Alcoa and failure upon Alcoa's part to cure the violation within 30 days after written notice thereof from Defense Plant Corporation. There was no discussion of this language. I think the wording is similar to that which Defense Plant Corporation includes in many, if not all, of its contracts.

32. Paragraph 23 of the contract provides that, in the event contracts for the power necessary for the operation of the plants satisfactory to Defense Plant Corporation and Alcoa have not been entered into within 90 days from the date of the agreement, either party may cancel the contract. This provision was inserted as a result of a suggestion by Mr. Jones. He recognized that it would take some time to negotiate the power contracts. On the other hand, it would be most inadvisable to hold up construction of the plants until the power contracts were negotiated. There was always the possibility that it would be impossible to make a satisfactory arrangement for power at any particular locality and consequently Defense Plant Corporation wanted to have the right to cancel the agreement with respect to a particular plant and stop work on its construction in case power was not available on satisfactory terms. Since Alcoa was interested in the profits from the operation of the plant, it was also felt that it ought to be satisfied with the arrangements made for power, although it was not believed that Alcoa would ever exercise this right to cancel.

33. Paragraph 25 of the contract contains a provision excusing Alcoa from performance of the contract to the extent that it is unable to perform by reason of inability to obtain essential materials, or the transportation thereof, or by reason of labor shortage, or labor disputes, fire, explosion, accident, sabotage, or any other cause beyond Alcoa's control. There were no discussions regarding this provision of the contract. This language is merely an ordinary force majeure provision which I think was taken from some of the Government's standard forms of contract.

34. Paragraph 26 provides that Alcoa will, upon the request of Defense Plant Corporation, design, construct, and operate additional plants for Defense Plant Corporation, with Defense Plant Corporation reserving the right to permit someone besides Alcoa to operate them. At one time, fairly early in our negotiations, Mr. Jones told me that, in addition to the alumina plant and the smelting plants in Massena, Ark., and Oregon or Washington, the Government might want Alcoa to construct plants at Spokane, Tacoma, and Los Angeles, and I think language covering this was included in one of the early drafts of contract. Later, this language was eliminated and instead a general provision was substituted to the effect that Alcoa would build any other alumina or aluminum smelting plants that the Government might desire to have built, upon the same terms and conditions as were set forth in the August 19, 1941, contract. Alcoa also agreed to operate such other alumina or aluminum smelting plants, in general, on the same terms and conditions, but Defense Plant Corporation reserved the right to have the plants operated by any other person, firm, or corporation that it might select. At one point in our negotiations there was a brief discussion as to the possibility of Alcoa being asked to operate one or more of the proposed plants at Spokane, Tacoma, or Los Angeles, Mr. Jones having suggested that it might not be possible to make satisfactory arrangements with other concerns to operate such plants and wanting to know if Alcoa would operate them, should the Government so desire, on the same terms as we would operate the smelting plants which were to be specifically covered by the contract then being negotiated. I said that we would.

35. Paragraph 27 of the contract provides that in case Defense Plant Corporation and Alcoa are not able to agree upon any matter as to which their agreement is required, such matters shall be referred to Mr. Jones and myself for determination and in case of our inability to agree, such matter is to be determined by such person as we may jointly select. In explanation of this provision, I may say that as negotiations progressed Mr. Jones and I came upon not one but many questions that we realized would have to be left for future determination. We felt there was not time to work out formulas for the determination of many of these questions because of the urgency of getting the contracts signed and the construction of the plants started. Furthermore, both Mr. Jones and I considered that the transaction was analogous to a partnership in the operation of these plants. In making a partnership agreement no one ever tries to provide the answers for all the questions that will arise over the course of years. Things inevitably come up upon which the partners must agree. Mr. Jones and I recognized this and we accordingly provided that in case Defense Plant Corporation and Alcoa were not able to agree on these various points, then the matter should be referred to Mr. Jones, or such other person as might succeed him as head of the Federal Loan Agency, and myself, or such other person as might be chief executive of Alcoa, for determination, and in case we were not able to agree then we were to call in a third party who would decide the matter.

36. Paragraph 4 of Appendix A annexed to the contract of August 19, 1941, provides that in the determination of profits and losses of the leased plants for any year, Alcoa shall be reimbursed for its overhead to the extent specified in said paragraph 4. There was considerable discussion on this question of overhead. Obviously Alcoa is entitled to be reimbursed for the amount of its overhead that is fairly applicable to the operation of the leased plants. The difficult question is the determination of this fair amount. Officials of Alcoa gave a great deal of thought to this matter and, after extended discussion, we felt that we should be allowed 1 cent a pound overhead on the aluminum manufactured in the leased smelting plants and one-half cent a pound on the alumina sold to outsiders. Mr. Jones would not agree to these figures. He said that the overhead on aluminum should only be one-half cent per pound. I then proposed that we compromise on three-quarters of a cent per pound but Mr. Jones was reluctant to accept this figure. Finally we agreed that Alcoa should be allowed an overhead charge of one-half cent per pound on aluminum plus such items of overhead as we were able specifically to identify as chargeable to the leased smelting plants provided the total of these latter items did not exceed one-quarter cent per pound. In calculating the overhead charges on alumina, 2 pounds of alumina were to be considered as equivalent to one pound of aluminum but it was always intended that this overhead charge on alumina should only apply to such alumina as was not used in the smelting plants leased to Alcoa.

37. In one of the early drafts of the contract prepared by Mr. Ewing, it was provided that Alcoa should be reimbursed for its overhead expenses incurred in connection with the manufacture of alumina by a blank amount per pound of

alumina and for its overhead expenses incurred in connection with the manufacture of aluminum by a blank amount per pound of aluminum. In the draft of the contract referred to, which I understand was obtained from Mr. Ewing's files, 1 cent per pound had been inserted in each of these blanks in pencil. While, as stated in the preceding paragraph, Alcoa originally thought it should receive 1 cent per pound to reimburse it for its overhead on aluminum, there never was any thought or suggestion of asking 1 cent a pound on alumina, and I do not understand why any such figure was inserted in any of the drafts of the contract.

38. Paragraph 7 of Appendix A contains the names of a number of accounting firms and provides that a partner in any one of such firms may be selected by Defense Plant Corporation as an arbiter to settle disputes with respect to the determination of profits or losses arising from the operation of the leased plants. I do not recall any discussion with representatives of Defense Plant Corporation regarding this list of names. I think the names were chosen by Mr. Ewing. I do recall that one of the early drafts did not include the firm of Collins & Co., who are accountants for Alcoa. I suggested to Mr. Ewing that this firm should be included so that Defense Plant Corporation might use a partner in that firm in case he should be considered best qualified to act as arbiter in a particular dispute.

Respectfully submitted.

ARTHUR V. DAVIS.

DECEMBER 24, 1941.

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